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Our Prize Essays.

THE TURNIP AND ITS CULTIVATION.

BY AUGUSTINE MATSON OF ONONDAGA COUNTY.

SOIL.—Almost any soil, on which we should have reason to expect a fair crop of corn, is good enough for turnips. But they are more particularly adapted to some soils than others. I have raised them on quite a variety of soils—almost all except a stiff clay. My conclusion is that a sandy soil is best. I can raise them at a less cost per bushel, and they are generally of a better quality.

Last season I sowed them on a side-hill and also on a small strip of rather wet and level land at the bottom. The piece embraced quite a variety of soil—gravel, sandy, sandy loam and clayey loam were each represented. The yield was not very dissimilar on the different parts except on the wet and level strip at the bottom; here the turnips were small and wormy. Those on the sand and the sandy loam were a little larger it was thought—but the great difference was in the quality. The part which was sandy gave smooth turnips, having smaller stalks and fewer small roots, and the quality was so much better that we soon learned to select them for the table.

I have raised them on new ground with good success; one of the best and the very cheapest crops of them I ever had grew on new land, without any manure.

A clover sod is good; as a general rule, the best for them. In my experience, I find that I get smaller tops and smoother roots on sod ground. One season I sowed most of my turnips after potatoes, which had been planted on sod, but on one side they extended on to sod ground—a very stiff sod. The tops of those growing on the sod were very small, and came almost direct from the top of the turnips; while those after potatoes gave a great growth of tops, with long and large necks to the turnips. There was also another difference: those grown on the sod were all sound, while many of the others were hollow. The yield was not as large on the sod; the ground was not as well prepared as the other. It was not plowed as early as it should have been to have made it a fair trial as to yield. The same kind of ground was left for flat turnips, and put in that state of preparation which it should have, and gave a large yield of as smooth, nice roots as I ever saw, and that too on a high and dry knoll. In over two hundred bushels not a wormy one could be found. I had already become satisfied that dry sandy soil was best for ruta bagas. I then became pretty sure that it was useless to take pains to get mucky ground for flat turnips. This was twelve years ago, and I have grown a few of them almost every year since, and always on dry upland, and with good success. I think they are more nutritious, and know that they will keep longer without becoming pithy when grown on upland.

MANURES AND THEIR APPLICATION.—What kind of manure shall I use, and how shall I apply it? The manner in which it is mixed with the soil makes more difference with the crop than either the kind or quantity. If green manure is to be used, it should be applied early in the spring, and plowed in, but not quite as deep as you wish to plow for the turnips. It is less labor to apply rotted manure; but if it has been in the yard unmixed with anything else, and scattered around exposed to the weather, it has lost a large part of its value. I had rather use green manure if it is not too coarse. I once used yard manure composted with swamp muck: ten loads of manure to seven of the muck. I let it lay one year, and then applied it to three-fourths of an acre of ground for turnips, putting it on the surface and harrowing it in. The grasshoppers injured some parts very much, but a half-acre of them gave four hundred and eighty-five bushels, for which I was awarded the first premium of the Oswego Falls Agricultural Society, in 1858.

I have used hen manure, trying it on a few rows, by sowing it in the drills or marks at the time of sowing the seed; also sowing broadcast on the ground after the seeds were sown. My conclusion was that the hen manure was worth more to me to apply to corn, than for turnips.

A few years ago, sometime in May, a man came to me saying that a horse of his had "died suddenly in the road up by Mr. ——," which was about one-fourth of a mile distant, and that he had asked for their oxen to draw the carcass away, but was refused. He appli-

ed for mine; I told him he could have them if he would draw the carcass to me, and back in the field where I should show him. He did so. I put two loads of swamp muck on the carcass, and over that say about a foot of sods. The whole lay until time to sow turnips the next year, when, after the ground was plowed, it was scattered over a radius of several rods, taking the place of three or four loads of other manure. This spot gave the largest ruta bagas I ever raised. I measured a square rod of the best, which gave at the rate of over sixteen hundred bushels per acre. The next season the ground was sown with corn for fodder, and this spot gave a better yield than ground otherwise manured. I have spoken of this not only to show the worth of such manure for turnips, but also in hopes it may, (if it shall be read,) deter some one from drawing the carcass of any animal they may have die off, to the woods or some ravine, and leave it to worse than waste. They might better go to their yard and draw off their best manure to the same place.

I have several times tried plaster on turnips, and have concluded that it increased the growth of the tops too much. I have bought no other fertilizers for them. In the question of applying any manure to ground for turnips, one idea should be prominent. Is it such as may be thoroughly mixed with the soil before time for sowing the seed? If manure has been plowed under, it should be brought to the surface again with the plow, which should run a little deeper than at the first plowing.

PREPARATION OF THE SOIL.—It is my opinion that the cause of a failure or a partial failure of farm crops, is oftener found in a want of proper preparation of the ground, than lack of fertility. If a moment's thought be given to the smallness of the seeds of the turnip, the necessity for a thorough pulverizing of the soil will be seen. Here is the one great thing, without which all pains-taking and expense as to manure, the kind of soil, and sowing the seed, will be comparatively useless. And if any one fails, or will not listen here, he has little need to inquire as to harvesting or feeding. No after management can make amends. The after expense of growing the crop is greatly increased, but the desired goal will not be reached; and such an one will be ready to give up raising turnips. Two objects are to be, or ought to be, attained in the preparation of ground for turnips—the thorough mixing and pulverizing of the soil, which is of vital importance to the production of good crops, and the freedom of the ground from the seeds of weeds, which has a very great influence upon the cost of producing the crop.

I have plowed sod ground early in the spring, and plowed it again about three weeks before sowing, and then harrowed with intervals of three or four days. This course I like best if the sod is one that will get partially rotten, enough so that it may be made fine by the harrow.

If the sod is very heavy I would be sure to plow by the first of May, and apply the manure soon after, especially if it has foul seeds in it, and then frequent and thorough harrowings will dispose of the most of them. If any one will do this, and at the same time leave a small piece unworked until about time for sowing the seed, and then make it as mellow, or, if he can, mellower than the other part, he will be able in some degree to see the advantage of having the ground clean. If the ground is free from foul seeds, the after expense of the crop will be but trifling. I have seen crops of turnips lost, simply because the grass and weeds had got so much the start of the young plants that they could hardly be found among them. If the ground is full of foul seeds, the turnips must be hoed soon after coming up; and this, owing to the weather, cannot always be done. If they ought to be hoed, we will say, on Friday or Saturday, and rain and wet ground hinders until the fore part of the next week, the expense of tending the crop will be increased twofold or more. It is a risk too great to be incurred; I know that it can be avoided by a little painstaking. After the ground has received its last plowing, I usually use the harrow and cultivator alternately. If the ground is at all lumpy, I get on the harrow and make the team walk smartly, letting them stop enough so the labor shall not be too severe. This is the only way I have been able to satisfy myself in getting it mellow. Some may have better tools; if so, well; but the great majority of those who ought to sow at least half an acre of turnips this year, will have only plow, cultivator and harrow to fit the ground, and hand-hoe with which to till it. I can make them one of the best crops of the farm with only these tools, and so can others, if they will try.

Two years ago wishing to sow a few more turnips than I had made preparation for, I mowed about one-fourth of an acre of grass about the 20th of June. It was the second year from seeding with clover and timothy. I took off the hay, plowed the ground, then put on a thin coating—say three or four loads—of hog manure, which had been mixed with chip dirt and allowed to rot. I then harrowed thoroughly and sowed to ruta bagas, and had a good crop of sound and very fine roots. They were better in quality, and almost as good in yield, as those which I had sown some days earlier on ground which had been plowed twice.

A few years ago a neighbor helped me harvest turnips, and was so greatly pleased with the appearance of the crop that he said he would surely raise some next year. He prepared a piece of new ground for them, and wished me to come and sow them for him the next day in the afternoon. I was hindered, so that it was quite late in the afternoon before I got there. They had sown the turnips. I saw plainly that they would not have to get help to harvest the crop. One day's work with a good smart team on that three-quarters of an acre of ground, would have put it in condition to yield from 400 to 600 bushels of turnips; as it was, they got but few. If I were to give any rule, I would say make the ground what you would call mellow enough for wheat or barley, and then work over the soil as many more times as the seed of the turnip is smaller than a grain of wheat.

SOWING.—I make my rows two feet apart. I use a marker made by nailing runners on a board; the runners should be a little over two feet long, and as much as six inches in width. I have used a twelve foot board which gives seven runners and enables me to make marks for six rows at a time. The best handle is made by bending a small tree so that when in a half circle it will reach high enough to be conveniently taken hold of; up to the waist is about right. Make holes at an equal distance from the centre, and fasten the ends in them. I fasten my horse by boring holes in the front of the second runner from each end, and with pieces of rope or chain lengthen the traces of the harness, so the horse may walk before the marker. I have often marked my ground alone, but it is better generally to have some one lead the horse.

Do not make a deep mark; all it needs is one that will show plainly. As to seeds, I generally buy them; I have raised some, but the yellow birds are quite apt to harvest them for me before they are ripe. I buy half or quarter pound papers at the store, and have always found them good and genuine, except in one instance I found a paper of seeds producing sweet turnips, which I bought for ruta bagas.

Now we are ready for sowing. Do not be envious of the man who has a drill, for if it sows only one row at a time, we can get along about, or quite as well, without it. Empty a paper of seeds in a basin; take that in one hand, and as many of the seeds between the thumb and finger of the other hand as you can easily hold. If the wind does not blow, you may walk erect, carrying the hand which sows the seed over the mark and keeping up a grinding motion with

your thumb and finger until the seeds are about out, when the remainder can be dropped and more taken. Do not walk slow; you may walk faster than your usual gait, if you are in a hurry: I have sown and bushed in three-fourths of an acre after supper. I believe the papers usually say sow one and a half pounds per acre; I usually sow a little less. I had rather it would be less than more. To cover the seed I take a light scantling—a picket rail is good, and bore holes once in about 18 inches, and in each of these fasten a small brush—a small tree is best, as it will usually be straighter, and let a horse draw this over the ground, and it will cover the seed enough. I was once just able to finish sowing as a heavy shower came on. I gave them no covering except such as they got during the shower, and they needed no other. On new land I have sown them broadcast, the stumps being in the way of making marks.

As to the time of sowing the seed, I have done it as early as the 5th of June and as late as the 10th of July, but have come to the conclusion that about the last of June is the best time in this latitude—the north part of Cayuga Co. The earlier sown are more likely to be coarse grained and woody.

CULTIVATION.—If the ground is clear the plants can grow until they begin to put out middle leaves before hoeing, and they will then be out of the way of the fly, so that they can be thinned as we wish them to stand at the first hoeing. Soon after the middle leaves begin to grow they should be hoed and thinned. I thin to about 12 inches. If in some places, they are a little farther apart, I leave the next two a little nearer together. If the tops grow no larger than I wish them to, they are not too close. If there are any spaces where plants are needed, dig a little hole with the corner of the hoe, and then select a plant which can be spared, and strike the corner of the hoe under it and lift it out, and put it in the hole you made, press down the dirt a little with the hoe, and it is set out, and in much less time than it takes me to tell how I do it. I have had them injured some by the fly, but never wholly spoiled. I am inclined to think that good thrifty plants are the best protection against the fly.

As to how much hoeing I give them—I keep them them clean, no matter how often I have to hoe them, and if it is grassy, endeavor to let the grass and weeds no more than just peek out of the ground before paying them a visit. I have raised them with only one hoeing. The best crop I ever had was hoed only once. It is very rare to have to go through them more than twice. It is not necessary to pay any attention to the looks, only to cut out such plants as are not wanted, and cut up any grass and weeds that may be starting. The plants will take care of themselves if nothing crowds them. I never hill them up any. If they lop down when first hoed, never mind; they will soon straighten up and go ahead.

I presume a horse-hoe would be good, but I have always raised them without. But labor is becoming so dear I must try one. But whether I had one or not, I would have turnips.

HARVESTING.—I do not generally harvest them before about the 1st of November. I take a very light hoe and grind or file it sharp to cut off the tops with. I cut the tops before pulling. I strike so as to bring the tops between the rows, the tops of two rows together. I then pull the tops together with a hook and put them in piles. This keeps them clean, fit for feeding. I pull the turnips with a hook; I use the same with which I dig potatoes. If the weather is pleasant, they will be fit to put into the cellar or bury the same day. But it often happens that the weather is so wet and stormy that they will get wetter instead of drying; I then put them in piles of from five to six bushels, each piled as high as I can handily, and on the the top of the piles put an armful of tops. Do not let the tops come to the ground, as we want the air to circulate through the pile to dry them out. The tops will keep them from getting wet. When I bury them I take places where the water will not settle in the hole, and dig either in a trench or circle, so that it will contain as many as I wish to put together and not come more than a foot or two above the ground. I prefer a a trench, as it is easier dug, easier covered, and the hole is more easily filled with dirt the next spring, and that is making it easier all around, though there is one more advantage—it is much more convenient taking out a part of a pit at a time, when they are buried in a trench. I have put as many as an hundred and twenty-five bushels in a single trench. I put on but little dirt, say about six inches. It is better to have them freeze a little than to have them warm enough to grow. When I have had only my cellar under the house, I put in only a few loads when I gather them, and take out from the pits during the winter when there is occasionally a warm day.

FEEDING.—I feed them to all of my stock, but mainly to cattle and hogs. I have fattened beef on them, and know that they are cheaper than meal. The only drawback is the labor of feeding. I will here say what I ought, perhaps, to have said before, that I prefer the yellow Swede or ruta baga to any other which I have tried; I have made no experiments to test their comparative values, but judge by the preferences which the the animals show to which I feed them. The first requisite is to have them clean; I do not wash them, but cut off the roots if they have any. To cut them, I use a spade ground sharp; I have a box to cut them in, open at one side, so that I can shovel them off conveniently. After a little practice one can cut them very fast in this way. If the roots are cut off, and also the stalk, if they have much, they can be fed to cows giving milk without injury to its quality. For working oxen I consider them invaluable. They are cheaper than grain, and for that use better. Oxen fed on turnips are not much troubled by the heat.

A man looking for a yoke of oxen, once came where I was breaking up a stiff sod, on a very warm day; he was surprised to see how they walked along, paying no attention to the very oppressive heat. He wished to buy them, but thought we asked too much. He went on, but came back and took them. He was disappointed in them; they did not stand the heat as well as he expected. The trouble was he had no turnips for them. When cattle become accustomed to them, there is no food they seek with such avidity. I feed some to my horses, generally giving them some once a day. They seem fond of them; they prefer them to carrots. I winter my store hogs mainly on them. For hogs I cut them finer than for cattle; I have tried cooking them for hogs, but like feeding them raw better. If hogs have as warm a place as they ought to have, they will grow finely, fed almost entirely on turnips. If farmers would feed ruta bagas to their hogs, there would be less complaint about losing their pigs than there now is. If hogs had not been used to eating them, I would give them but a few at a time at first. When they have learned to eat them, they relish a few of them occasionally until they are fully fattened. Calves fed a few turnips each day, will do better than if fed with meal. If fed enough of meal they might get fatter, but with the turnips they will keep in good order, and grow faster. As to feeding sheep with them, I cannot speak from experience, but see no reason why they should not be valuable.

As to the cost of producing them, it will of course vary very much in different seasons. The cheapest crop of them I ever raised grew on new ground, and if the space occupied by stumps were taken out, it would be as large a yield per acre as I ever had. I sowed 90 rods broadcast, using half a pound of seed. I sowed them the 29th day of June, and soon after they came up spent one days' work striking here and there with a hoe, to cut out plants where they were too

thick, and to cut out now and then a weed. This was all the cultivation they had. With the help of a man and boy, I pulled all of them and got them buried in one and a half days. The piece gave about 450 bushels. After the seeds were sown, the cost was little if any over one cent per bushel.

I kept an account with the crop I raised twelve years ago, and found that after paying for use of land and all labor, that I had grown the crop and secured it at an expense of about five cents per bushel. My crop of 1858 cost me about seven cents; the next year they did not cost me quite as much; some seasons they have cost perhaps as high as ten cents, but I believe they have not cost me after paying for the use of the ground, on an average one year with another, over six cents per bushel, and the greater part of that expense is for team labor in preparing the ground, allowing them the same wages I would have to pay if I hired them, and owing to local causes it costs more here than in some localities.

I have always counted my crops of turnips by baskets, and my baskets have held a little over a bushel, and generally the baskets would not be emptied until no more could be piled on. I have sold a good many for table use, and have ever found them to hold out after taking out all the unpromising looking ones. Until this season I have lived near enough to Fulton and Oswego to have them pay well as a market crop. One acre of them is, in my estimation, worth eight or ten acres of hay in wintering stock. In such seasons as the past has been they are particularly valuable. If our winter proves a severe one, there are many who would rejoice if a small part of the labor they have spent in growing a nasty weed had been used in growing a crop of ruta bagas.

HEDGES.

Messrs. Editors—I can with confidence recommend the honey or thorn locust as a valuable material for hedges—the best as to utility, and indeed for beauty, of anything I have seen tried. It is also very hardy, and will grow on any soils. Thirteen years ago this spring, when I came on to the place where I now reside, there were two hedges growing partly on a thin gravelly soil, and residue on deeper loam. One was entirely of the thorn locust, and grown to some twenty feet high. I had that cut down to four feet high, leaving a timber fence similar to those represented by the venders of the white willow, which, with a few stakes, made a very good fence. In the winter following we had a deep snow, and in spring found a few rods of it barked by the mice. Yet that did not injure the hedge, for from the injured trees the sprouts came up near the ground, and the old stalks died and hardened, and remained until the new growth supplied the place, so that the fence was decidedly improved, both in appearance and utility.

The other hedge was composed of one row of the same locust, and another row, about 2 feet from that, of the common thorn. On this the locust had grown 12 or 15 feet high, and the thorns 4 or 5 feet. I had them cut to about 1 foot from the ground. Not knowing how to trim a hedge, I neglected both until 2 or 3 years ago. Since that they have done well, but the thorn is a puny affair beside the locust, which makes a perfect man fence, and a good one for turning stock and swine. I am so well satisfied with this experience that I have planted 200 rods this spring, and a little last fall.

Then the inquiry came as to the best manner of constructing the hedges, and first what is the character and habits of the tree? It bears long pods, with some 15 beans in each pod, of which about 1-15th or 1-20th are large, three times as large as the others. The pod has a honey sweetness inside, and sheep will devour them when not too hard. Why not run them through a cutting box and soak them for sheep or swine? Are they not the very husks the prodigal son disputed for with the swine? But hold! I have the Natural History of the State, how; fortunate but few of the farmers can have that treasure. So I pondered over the huge quarto, and found the two vols. on botany, with the sprig of a tree on the cover, turned to the index, found locust, vol. 1, page 165, which described the common locust tree (Robinia pseud-acacia.) Then turning over to page 166 I found this important description: "In the western part of the State the R. viscosa is almost naturalized in some places, being used for hedges."

This was printed in 1843—almost naturalized. Upon that I went straight to measure one of the many trees I have apparently of the same age, and found the circumference to be 8 feet and 1 inch, and about one-third of the outside of the trunk at the ground decayed from old age, and thus ended my botanical research.

So being without guide, I built fences—first setting posts, then throwing up a ridge about 1½ feet high, sods inverted on outside, mellow earth within, and two boards to each pannel, to complete the present fence, and a bed for the hedge. Then last fall I planted some of the beans fresh from the pods. They have not yet vegetated. Early in the spring I planted another piece from the pods which lay under the snow all winter. Part of these have grown—perhaps about the proportion of the large seeds to the small ones. After that, planted again, having soaked some in hot water, so as to make the pods soft, for the convenience of shelling. But very few of these have grown, and occasionally some have started lately (May 27th.) As a last experiment, after shelling, I poured on boiling hot water, and placed them near the kitchen stove, and let them remain until sprouted, which was some four or five days; the large ones sprouted first. I then planted until I filled my beds. These have grown well. The residue so soaked and sprouted I put into a box of earth and placed out-doors, and today have transplanted about 40 rods. They have a long tap root, about 6 inches in length, and those set out in the morning have not wilted during the day.

Since the above was written (May 29th) I have discovered many coming up in the highway where the ground is beaten hard, and many in the ditch beside the roads. I have taken some from the road, which have a short root, so I conclude their habits are like the ash—have a tap-root where the ground is deep and mellow, and a spreading root when necessary. They have a strong vitality. Z. A. Leland.

Effects of Buckwheat Straw on Animals.—A correspondent of the Rural New-Yorker writes as follows: "Buckwheat and buckwheat straw create, when fed to them, on all the domestic animals a variola-like cutaneous eruption, called buckwheat eruption, appearing on all the spots poorly covered with hair or wool—around the mouth, on the ears, and inside the hind legs. This disappears without further injury as soon as the food is changed." Will any of our readers who have fed buckwheat or buckwheat straw, give us the results of their experience?

Laying out Curves for Roads and Walks.

There are two prominent reasons why roads and walks should be laid in curves: the first is utility, and the second is beauty. Unless the surface of the country is perfectly level, a public road should vary from the straight line, in order to avoid the ascent of hills. Unfortunately, in many places, this has not been properly attended to. We could point out a number of instances where a slight deviation from the right line in a public highway, would have prevented the necessity for every carriage and loaded wagon ascending a steep hill. In one case, familiar to us, the ascent is ninety feet from the level; a deviation of twenty rods, with a lengthening of the road of not more than five rods, would have entirely avoided the hill. Fifty teams on an average pass this hill daily, making 15,000 laborious ascents annually, simply because the man who laid out the road did not exercise a few minutes' thought. Several years ago a turnpike road was made from Worcester to Boston, three miles shorter than the old road, but passing over instead of avoiding the hills. But very few travelled it—they preferred the longer and leveller route, and the enterprise proved a failure. A humbler illustration occurred on the farm of an acquaintance who made a smooth farm and cattle road over an ascent, but leaving a portion of the enclosed space more nearly a level. His cattle soon found out by practice that more exertion is required to overcome gravitation in walking up and down the hill than by passing on the rougher surface around it; they therefore selected a path for themselves very nearly on a level, and where a skillful engineer would have placed it, and after a while wore it smooth by frequent passing.

In a hilly or undulating country nothing of the kind can be more agreeable than the constant deviation to the right or left, in graceful curves, on a nearly level, well-laid out and well-constructed road. On the other hand, travellers have often remarked on the tiresome sameness of a long, straight road over level country.

In laying out ornamental grounds this remark applies with still greater force. Straight walks have a stiffness entirely discordant with the beautiful and curved forms of nature, and the old geometric school has consequently given place to the modern, more natural, and more graceful style.

A well-laid out and smoothly kept walk will impart character and finish to any grounds, even if the rest is in rough condition. But a badly curved, broken-jointed, ill-dressed walk will spoil the appearcnce of the finest landscape garden in other respects.

Novices are often puzzled for definite rules for making curves. In the simpler cases it may not be necessary to draw plans on paper; but where this is done the work may nearly always be accomplished in a better manner. A well-drawn design is transferred to the grounds by measuring the several parts. But still it is desirable, in finishing the details, to adopt some rule for making true and easy curves. The best mode is to provide a large number of short wooden pegs and stick them in the ground, at regular distances, deviating from the straight line a greater or less degree according to the length or shortness of the curve. Fig. 1 exhibits this process where the successive and regular deviations form the curved line desired. At

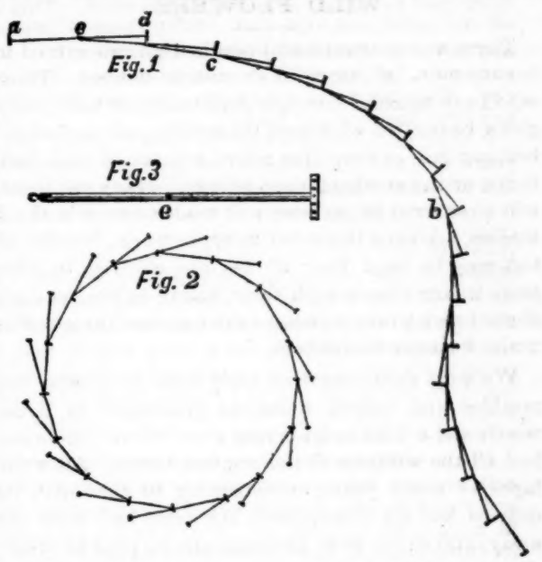


Fig. 1

Fig. 2

Fig. 3

c these deviations are slight and the curve is longer; at *b* they are greater and produce a shorter and more abrupt curve. A perfect circle may be laid out in this way without the usual resort to a line and centre-pin, fig. 2. A land surveyor may thus run a circle miles in diameter by successive and uniform deviations at each observation taken at regular distances.

We have found the following contrivance a simple one, and to answer a good purpose. Take a light wooden rod, (fig. 3,) say two yards long, with a small wire hook at one end, a slight notch on each side at the middle, and a graduated cross-bar at the other end. Small holes are bored into this cross-bar at regular distances, for the insertion of a pin. Suppose we wish to lay out a walk, as shown in fig. 1, commencing with the direction *a. e.* Place the rod just described *a. d.* in this direction, and stick in a pin at *a.* and at *e.* The deviation of the third pin at *d.* can be accurately determined by making a few trials. When thus determined, set the pin in one of the holes of the cross-bar at the determined distance from the centre, and insert a corresponding pin into the ground. Then slide the rod a yard forward, placing it against the two last pins and repeat the process. So long as this process is continued it will form a uniform and perfect curve. If, however, it is desired to pass gradually from a long to a short curve, remove the pin in the cross bar farther from the centre at each successive station, and the result will be shown at *c.* and *b.* in figs. 1 and 4.

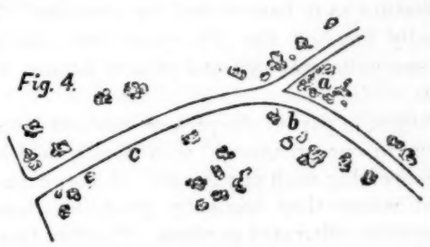


Fig. 4.

After some experience, the ease and facility with which curves may be thus extended over grounds in all directions, will be surprising to any one who has not previously tried it.

Curves in roads are sometimes angular and unpleasing, because laid out merely by guess. By adopting the rule just given, on a more extended scale, a perfect form may be attained, even if the successive stations are merely measured by pacing.

WILD FLOWERS.

There are no ornamental plants that can exceed in beauty some of our wild or native flowers. Those who have rambled through dark woods or wild, rocky glens, have often witnessed the striking effect of white, brilliant red, or deep blue colors, contrasted with dark rocks, or the shade of deep foliage. Many of these, when removed to gardens, and made to grow in thick masses, are even improved in appearance; but the effect may be even finer if they are allowed to grow more in accordance with their native habits on dark shaded rock-work, or in the wilder parts of the grounds under festoons of climbers.

We were accustomed in early days to pursue our rambles and collect botanical specimens in dense woods and a dark neighboring glen, where vegetation had all the wildness of the original forest. After the lapse of many years, on returning to this spot, its charms had all disappeared, the trees had been cut away, and cattle were browsing among piles of brush, thistles and burdocks.

Now cannot men of taste make an effort to preserve a portion of the original beauty of the rougher parts of the country? Glens and hillsides, and rocky precipices are of little use to the farmer, and might be retained with their wild growth and tangled shrubbery—their ferns, mosses and beautiful flowers. A few smoothly cut winding walks would render such localities easily accessible, without diminishing their characteristics. A friend who possesses a beautiful country place within a few miles of one of our large eastern cities has succeeded in retaining several acres of wood on a broken surface, and all the improvement he has made consists in carrying a few smooth and graceful walks through its different parts—so that the visitor passes in the dark shade, ascends easily the steep precipices or reaches the rustic seat beside the cascade. All this is attended with no expense whatever except to keep the walk in order. Horace Greeley has urged the importance of preserving from the axe and the saw-mill the extensive wild region in the northern part of this State, known as John Brown's Tract. Whether the preservation of so vast a region is desirable, many will doubt; but every person of taste must agree with us in retaining smaller portions wherever practicable. Those who have visited Trenton Falls have been struck with the peculiar charm imparted to that place by retaining every feature as it has existed for centuries. They can easily imagine the defacement and desolation which saw-mills, saw-logs and piles of lumber would present.

Our object in part at the present moment is to call attention to our ornamental wild plants, which are fast disappearing with our forests. If they cannot be retained where they originally grew, let them be transferred to cultivated gardens. To effect this purpose, the best ones should be selected and marked while in bloom. It is now too late in the season for the earliest, but a memorandum may be made for another spring. Among the finest as well as earliest, are the *Hepatica* and *Claytonia*. The former of these presents flowers of almost endless shades from pure white to deep pink and purple. A judicious mixture, placed in broad masses in garden beds, affords one of the best floral ornaments of early spring. The *Anemone thalictroides* immediately succeeds this, and is distinguished for its delicacy and handsome white flowers. The large white *Trillium* and the *Erythronium* are a few weeks later. The *Phlox divaricata*, like the Hepatica, presents a great variety of shade in color, and if the plants are now marked, they may be taken up as soon as flowering ceases. The beautiful and showy *Aquilegia canadensis* appears nearly at the same time. Among the later bloomers are the delicate *Campanula rotundifolia*, the *Cymbidium pulchellum*, the showy *Orchis fimbriata*, the *Cypripediums*, the scarlet *Lobelia*, and the *Lilium philadelphicum* and *L. canadense*. The *Asclepias tuberosa*, for large beds for brilliant display on large grounds, is scarcely equalled in the latter part of summer. The flowers vary from fine yellow to brilliant orange; and if the plants, as they grow wild, are marked so as to give these different shades, they may be removed a few weeks later to the garden. In autumn, the *Liatris* and *Aster novæ angliæ* form large and showy masses of purple flowers—the latter especially, after growing several years, has been known to augment to a large stool, and to furnish a hemispherical mass of flowers five feet in diameter and four feet high.

Visit to a Stock Farm near Boston.

MESSRS. EDITORS—Never before have circumstances so combined to keep the minds of Bostonians completety engrossed in the cares of business, as during the four years just past. There have been the excitements of the news-rooms, of the gold and stock exchanges, of the wool and cotton markets—not confined to particular classes of men, but all-pervading, all-absorbing. Our first thoughts when waking have been on the prospects of our forces capturing Petersburg and Richmond; our second and frequently last thoughts, on the closing prices of gold and merchandize. Many of the causes of this unhealthy state of feeling are now but feebly felt or wholly inoperative. Our merchants will be able to visit the country sometime during the summer heats, and there enjoy the blessing of a pure atmosphere, without the corroding fear that their interests suffer in consequence. There are, however, many business men in this community, in easy pecuniary circumstances, who have not been satisfied with the excitements of the markets, but have fled, early in the day, to the green fields of the suburbs. Had I their sanction, I could mention the names of several gentlemen, who have spent their leisure hours, not only to their own profit, but to that of the whole community; of several, too, who have never aspired to be millionaires, but who are more valuable citizens than many of our most wealthy merchants.

It is to the results of the labors of such an one that I invite the attention of the readers of your paper in this article.

A week since, while enjoying the hospitality of a friend in Lexington, Mass., my host kindly invited me to accompany him on a visit to the "Munroe Farm," which, he informed me, is an object of interest to the agricultural community. A few minutes' walk brought us to the barn and piggery. We spent a short time in examining a number of heavy draught horses and a small stock of Jersey cattle, all of which

looked well and were in good condition. Passing through a side door, we entered a long shed, lighted by large glass windows in the roof. On either side of the passage-way are arranged pens for the hogs. Here are kept the animals used for breeding purposes, all descendants of stock brought from Chester County, Penn. Most of the sows had litters of pigs, each one of which appeared strong and healthy. Mr. MUNROE informed us that the sows raise an average litter of ten pigs, and breed twice a year. He does not claim that the Chester County cannot be excelled in several respects by other breeds, but that there is no other breed that has thus far fallen under his eye, that equals this in prolificacy and amount of pork produced with average keeping. Their quiet disposition is conducive to quick growth and speedy fattening. After weaning, the pigs are for sale, and thus far all the offering has been disposed of before reaching the age of four months. We were shown the last of two hundred pigs, born last autumn, all of which had been sold, and this one was only awaiting the orders of the purchaser

Passing on, we entered another building containing a steam-boiler and steam-chest. Here the food is prepared, and when cooked is put in a car which runs on a rail the whole length of the passage-way between the pens. Turn-tables are conveniently arranged at each end, one connecting with the track leading to the boiler-room, and the other with a side track extending under the barn to pens, containing a number of very promising shoats. The only food fed to the hogs here is swill, cooked in the steamer. Twice a week this is carried out from Boston by the farm teams. The hogs lay on a bedding of sand, and generally looked as clean as if they had just been washed.

I cannot remember noticing any unpleasant odor about the premises, and regret that time failed me to observe the means used for ventilation.

The sun, streaming through the large windows in the roof, gives to each animal when it wishes, an opportunity to bask in the warm sunshine, and doubtless this arrangement not only leads to early growth and acquisition of strength, but is a great preventive of ill-health and disease. Twice a week the pens are cleaned by throwing out that portion of the sand which has become soiled, and when necessary all is removed and the pens are whitewashed.

Mr. Munroe selects for the replenishment of his stock from the litters born in spring, and has several different strains of blood, sufficient to enable him to guard against close breeding.

At some distance from the buildings just described, stands a barn, the upper part of which is used for the storage of hay, and the cellar as a piggery. This we did not visit, but we were informed that there were kept a number of hogs of various ages, sufficient to consume a cord of slaughter-house offal per diem. This offal is contracted for near by, and is fed without preparation after the stomachs and intestines have been thrown out.

On our way back we looked into the stable where the carriage horses and breeding mares are kept. These all stand on clean sand; an excellent arrangement for the feet of the horses. Although this bedding is damp, none of the animals have caught cold during the long time the method has been tried.

As we came out of the stable the farm lay before us. This consists of about 35 acres, 30 of which compose a peat meadow, flat as a floor, and all grass land. This meadow is in the shape of a parallelogram, bordered on one of the long sides by a large brook. At right angles, and at distances of about thirty feet, tile drains have been laid, leading to the brook, the waters of which are supplied by the drainage from the meadow. The tiles are laid on a spruce board at the depth of about four feet, and the inclination is one inch to twelve feet. Wherever the land is wetter than usual, the drains are laid nearer together. Some idea of the water discharged can be got from the statement that in times of drouth, each stream is as large as a pipe stem.

Every autumn, a top-dressing of from six to eight cords of manure to the acre, is spread on the field. In many places the ground is so soft that nothing can be carted over it until it is hardened by the frost. Still this difficulty has been partially overcome by using shackles on the horses' feet. These are made of board, eight inches square, and are attached by means of thumb-screws. The horses soon get accustomed to them, and can draw almost as well with as without them. With them they can pull the cart where a man would sink to his ancles.

The manure used is from the stables and piggeries, and is, consequently, mixed with sand. When it is spread, he calculates that the ground is covered with this sand to the depth of half an inch. When spring comes it is not to be seen, but its effect in lightening the soil and increasing its porosity, is very apparent. Whenever it becomes necessary to plow the field, no doubt the owner will be amply rewarded by the superior condition in which it will be found. Soon after the meadow was put in grass, his workmen went over it and removed the weeds of every description. Now one day's labor of two boys is sufficient to keep the ground free.

And now to the crop! In the summer of 1863, there were cut, by actual weight, 120 tons, or four tons per acre. Last year, notwithstanding the drouth, 105 tons, or 3½ tons per acre. The latter crop was sold for $40 per ton.

We saw a patch of about an acre, excellently tilled, sown to carrots. The product will be fed to the horses and cattle.

Formerly, on one edge of the meadow three knolls were situated, two of which are now cut away, and the laborers are soon to commence on the third. These were composed of two qualities of sand, the finest quite similar in the size of its particles to common house-sand. At different times this is carted to the stables, where it is used for bedding.

If any of your readers have borne with me thus far, it is probable that they are ready to exclaim that this is "fancy farming." However this may be, there are not many who manage farms of a similar size and realize one-half the profit.

I have been told what I had already guessed, that the profit on the total investment is a very liberal one. To me it is a source of much regret that so few are disposed to follow in the footsteps of such men as Mr. Munroe, and thus reap the just reward of honorable labor.

Messrs. Editors, had it not been for the interest taken by prominent agriculturists in the system of farming just described, I should not have dared to trespass upon your columns. I cannot close, however, without expressing the hope that Mr. Munroe may yet find time to write a more detailed account for publication in the next State Report. F. A. F.

Boston, May 15, 1865.

A Ride on the Banks of Cayuga Lake.

Up to the present time the crops bordering on the Cayuga promise unusually well. The wheat is already in full head, and presents a dense and uniform growth. Meadows have been well watered by the spring rains, and grass is abundant. Corn is larger than usual for so early in the season, (June 12th,) some of the best crops being already a foot high. Tile-draining has been extensively practiced, the strong and tenacious character of the soil rendering it indispensable. Where a regular system of drains has been laid down, the fields present a uniform appearance, and the soil when cultivated is mellow and friable throughout. Where it has been neglected the crops are in uneven patches, and large clods cover the surface.

Large orchards have been set out in many places One farmer had transplanted forty acres in apple trees, giving them imperfect cultivation, or rather leaving large strips of weeds and grass next to the rows and plowing between. He had, however, mulched them, and they were doing tolerably well. A neighbor adjoining had set his trees in weeds and grass, and given them no further attention. They were struggling for a living, some of them with little prospect of success. On a small farm I observed a hundred standard pear trees, mostly of Seckel, which had been planted three or four years. The soil was naturally firm, dry, and rich, and had been kept clean and under cultivation. The present year the crop of potatoes had been planted among them, and quite recently they had been copiously mulched with the short grass cut from the door-yard. It is hardly necessary to say that this orchard was in the finest condition, presenting dark green foliage and vigorous growth of the shoots. Another pear orchard, similar in size, stood in grass, and "took care of itself,"—the trees were feeble in growth, and the foliage light green or yellow. The owner hoped that a part of them would "come to something." One of the finest pear orchards I have met with anywhere, is that W. R. Grinnell, Esq., at Levanna. He has about 2,000 dwarfs, and over 2,000 standard pear trees. Most of them were planted about three years ago, and nothing can well exceed their present beautiful appearance. Seventeen hundred were purchased in autumn at a neighboring nursery, heeled-in for the winter, and set out the next spring. All but five lived and flourished. Last autumn a thousand more standard pear trees were procured at the same nursery and transplanted in the spring. All of these, without a single exception, are growing finely. The field in which they were set was occupied last year as a meadow; the owner had not time to reduce the whole of this to fine tilth. He therefore plowed strips eight feet wide, leaving spaces of grass twelve feet wide between them—twenty feet being the intended distance of the rows. In the spring these plowed strips were made mellow and the trees planted, no crop occupying the plowed portions. They are easily kept mellow and clean, by means of a one-horse plow nearest the trees, and a two-horse plow more remote. The twelve feet strips of grass are to be cut for hay, after using what is desired for mulching the trees on the approach of hot dry weather.

The orchard caterpillar is very abundant here the present year. Those who have industriously and perseveringly destroyed them, have good orchards and a promise of a fair supply of apples. Those who have neglected them cannot expect much. One large orchard was observed to have nearly half the trees entirely stripped of foliage, about forty nests being counted on a single tree. The result is that no apples can grow where there are no leaves to furnish the food to them; and the injury to the trees themselves must be very serious—entirely checking growth for a time, and if they recover their foliage, the new shoots cannot mature properly before winter. When will owners be willing to devote half as much time to the destruction of pests and the general care of their orchards, as they do to the necessary cultivation of corn and potatoes—the product of the former when well grown being many times the more valuable.

Among the different weeds which find their way on farms as the country becomes older, the quack-grass has as yet made but little progress in this region. A farmer informed me that he had succeeded in destroying it effectually, by continually plowing it under. As soon as the first shoots began again to peep, it was immediately inverted. In the course of a few months it was effectually destroyed; but if allowed once to rise above the surface, it soon recovered itself, and the labor was lost. This remedy, namely, smothering - not allowing the plant to breathe through its leaves, may be applied in the destruction of all creeping plants which extend by the roots only, such as quack-grass, Canada thistles and milk-weed, but is less effectual, or may require a term of years, in subduing such weeds as red-root, chess and ox-eye daisy, which are propagated mainly by the seed.

The new cattle-law is becoming more generally enforced, and the lawless are yielding to the pressure of public opinion. In the town of Ledyard, and more particularly in the vicinity of the beautiful village of Aurora, where the present law originated, no animal is ever seen running loose in the highway; and I observed that one farmer had entirely removed a portion of his fence—his ten-acre cornfield not having a single rail to separate it from the carriage track. A few such examples as this would serve effectually to keep the law in force, for no person would have the audacity to let loose his animals with the law over his head and the certainty of their doing much damage. The grass along the highway is beginning to grow luxuriantly, and in some places good crops of hay are obtained. The rapidly increasing value and scarcity of timber is rendering the fencing of farms more and more difficult and expensive. Post and board fences of durable timber, usually last about twenty years if well made, after which the period may be prolonged some years more, by nailing on vertical facing-boards over the posts.

This being the year of the seventeen-year locust, these insects have now just made their appearance in great abundance. Along some of the oak districts they appear in countless myriads—travellers are annoyed with them as they pass along the streets, and their short or interrupted cry or song, blended together in such immense numbers, produced a continuous roar. Where trees grew seventeen years ago, especially oak trees, they are most numerous, and

come up out of the ground abundantly, even in open fields where trees then stood. An old decayed stump is often an indication of the place where they are found in greatest profusion. On such spots now converted to smooth roads, the surface is seen full of holes where they have emerged. J.

THE LAUNDRY.

Perfection in this branch of housewifery does not contribute as much to sensual enjoyment as skill in the management of culinary concerns. Granting that the vulnerable point of good will lies in the stomach, it follows that the censorious friend or fastidious husband, will be less severe if the table linen is not snowy white and smooth, than if the same quality were wanting in the breakfast rolls or cakes. Yet the fame and gratitude springing from our contributions to appetite, are circumscribed to the circle of our intimate friends, while the merits or demerits of our laundries are carried as an advertisement on our husbands' bosoms, flaunted in every crowd wherein our daughters spread their crinoline, and flutters out of every window in our houses like an auction flag, challenging notice; therefore to the ambitious housewife, success in the laundry is an ultimatum.

Wash-house.—Even in the smallest establishments, this house cannot be comfortably dispensed with, and we verily believe that one-half the dirt and discontent that mars the happiness of many homes, is traceable to the abominable habit of washing in the kitchen. It is too much for woman-nature to look upon heaps of foul linen, sloppy floors, and all the abominations of wash-day, and not feel disgusted at its close association with her table preliminaries. And yet she is a thrice blessed woman if the finale is not in her own particular chamber. According to the usages of many parts of our country, she does well if her own sanctum is not turned into a pandemonium of rough-dry clothes, sweating maids, thermometer at blood-heat, and momentary risk of making woful wreck of your matchless baby's face, by coming in contact with a hot iron.

We think there are few wives, after a little experience, who would not convert one of the double parlors and its rosewood furniture, into a snug wash-house and suitable implements for this indispensable labor. Husbands would probably demur, for they know little of the discomforts of wash-day, save the cold dinner and cross looks of the wife that scandal associates with it; and we are sorry to add, pride is stronger in our land than a rational love of home comforts—ergo, well furnished parlors are often had at any cost, and a wash-house now and then as a concession to a very dear, but capricious wife. Our limits do not allow us to specify plans, but we suggest a well ventilated room, capable of summer heat in a winter's day, for while washing may be made endurable, it can never be made agreeable work. It should have at least one capacious closet for the furniture necessary to be used in washing, and should have another for the clothes when collected rough-dry, and for the boards, baskets, &c., used in ironing. There should be in the wash-room a furnace or wide fire-place for placing two or more large kettles. In or near the house there should be a full supply of good water, and a pipe for leading off the dirty water.

In the slave States, where extensive beef, hog and and wool crops have to be handled, it is convenient often to use the wash-house for such purposes, in which case the drying and ironing room should be separate from the wash-house, and be only used for those purposes, or something equally cleanly. If the floor, woodwork, and vessels used about the wash-house, are all painted outside, it will be much easier to keep them clean. A HOUSE-KEEPER.

CORN IMITATION OF OYSTERS.

In a late number I saw a recipe for making corn pudding, which you seemed to think had been improved on from the original by the quakers, and as I chanced to be one of *that sect*, I thought perhaps it might still *continue to improve*, if I sent you my receipt, which is somewhat similar to that, called *Imitation Oysters:*

Take young green corn and grate it in a dish; to one pint of this add two eggs, well beaten, a small teacupful of flour, half a cup of cream, and a spoonful of butter, and some salt and pepper; mix them well together. A tablespoonful of this will make the size of an oyster. Fry them a little brown, and when done butter them, but when *fried in butter* it is sufficient. Sweet corn is preferable. A. B.

SECURING PEACHES.

One of the greatest vexations to residents in the range of the Alleghanies and in the prairie region is the difficulty of growing that most healthful, desirable and almost indispensable fruit, the peach. The causes of the difficulty have not yet been fully stated; perhaps they are not fully known by any one. Hard freezing below a certain figure of the thermometer is often stated as the cause, but no one can fix the point. We lose all after comparatively mild winters, and we sometimes have partial supplies after freezes of 20 to 25 deg. below zero.

Being particularly desirous of securing a few specimens of some new sorts this season, I bent down branches and trees to the surface of the ground in December when the wood seemed as ripe as it was possible for it to become, and covered them with spruce branches placed on the top of the first snow. Other snows succeeded, and we had what is quite unusual here, a continued thick mantle of snow throughout the winter, and no severe freezing occurred after it disappeared. Yet peach trees, roses, quinces, grapevines, and many shrubs, seemed to suffer quite as much as in some other winters of great exposure to parching northwesters or cold. Some of the peach buds were rotten, and whole branches that lay on the ground were dead. Evidently the wood was not ripe enough and a question follows as to the reasons for this. Going back farther to look for answers I find nothing that will apply, excepting that we had very great drouth, continuing through all the months of June and July, arresting early growth. In September and October we had frequent rains, and very warm, growing weather, inducing excessive growth after the previous long rest, but of course too late for the ripening up of such free-growing things as Rareripe peach trees and Isabella grapevines. Our mountain climate seems especially liable to these severe interrupting vicissitudes. Another probable cause of imperfect ripening of peach wood is the delay of growth caused by the loss of the first leaves from curl; this is perhaps the worst obstacle of all, because so general and annual.

I should have mentioned that some trees which I did not lay down, but around which I packed a coat of corn fodder two to three feet thick, grew better in the spring than those laid down, but will not bear. Larger trees, five or six years old, unbudded seedlings, have some fruit, but we want something better. I shall try, by attentive culture of some pet trees, to secure complete maturity of wood this summer, and will try the same modes of winter protection again, if I live, and shall be glad to hear of others' experience.

Tyrone, Pa. W.

SURFACE MANURING.

MESSRS. EDITORS—Permit me to add my testimony to what has been said in favor of surface manuring. Formerly the most common way of applying manure in this section was after spring work was done to draw out the manure without piling or rotting, and spread it on the summer fallow, to be plowed in when breaking up. This, as generally the manure was very strawy, was often found to do but very little good, while in some very dry seasons it was thought to be a positive injury, which was caused, it was said, by so much dry straw, causing the ground to dry up much worse than it otherwise would be likely to do.

When corn came to be more largely grown, many adopted the practice of applying their manure to grass ground in the spring for that crop. The coarse, strawy manure was not so much dried up then, and as it was turned under with a somewhat green sod, and there was more rains in the early part of the season, it was found that it rotted much better than when plowed under in the usually much drier weather in the summer. But though this was found to do much better, yet it was open to the serious objection, that when the corn first came up and stood in great need of manure to give it a good vigorous start, this coarse manure, turned under the sod, out of the reach of the small rootlets of the young corn, was no benefit whatever to the crop. Hence for a month or two the corn would have a small, yellow, poor appearance. But after that, when the sod and manure began to get rotten, and the roots of the corn fairly got hold of them, the corn would come forward very fast, and often make a good crop. This course is still followed to a considerable extent.

Then another practice was adopted to some extent, though not as much as it might have been to good advantage. This was to pile the manure in the yards in the spring, and draw it on to the land prepared for wheat in August, spread it finely, and work it in with Ide's wheel-cultivator. This application of rotten manure on and in the immediate surface of the soil, gave the wheat an excellent start in the fall, and was a great help in bringing it through the winter and spring in good condition, and when there was anything like a fair chance, gave good crops.

I had followed the two last practices, observation having shown me that I did not want to try the first course, during the time I had been farming, until I saw the practice of piling and rotting the manure, and applying it to grass ground in the fall recommended in the Co. GENT., when I adopted this course, which, varied somewhat by such circumstances as were not easily controlled, I have followed to the present time, with the most satisfactory results. The principle advantages of this course I have found to be:

1st. In regard to the time I have to do the work in. I pile manure at any time in the spring when there is time to spare, or when my help is not wanted for other work on the farm. If found necessary, it can be turned in the summer in the same way, when from wet weather, or any other cause, there is not much to do, or that can be done. And much the same course is taken to get it out in the fall; by always taking a time when it will not interfere with other work. This course I find a great advantage over the old way of getting out manure in the spring for corn. For with our short springs in Western New-York, it is all we can do to get our crop put in the ground in season, without stopping some time to get out manure. So to apply manure to corn in the spring, planting must generally be somewhat late, or we will have to draw manure when it is too wet to plow, and when the lanes and fields will be badly trod and cut up by the wagons and teams. I also find it better than to have to draw in August for wheat, when there is always all the other work that can be attended to.

2d. That the strength of the manure seems to be just where I want it. As for instance I usually put my manure on a clover sod that is to be planted to corn the next spring. The rains of the winter and spring carry the strength of the manure into and diffuse it through the soil, so that it not only causes the clover to make a very early and vigorous start in the spring, giving something of a growth to turn under, and a sod that, in consequence of the large amount of green succulent matter it contains, will very soon rot, and be of great help to the crop, but it puts the soil in just the right condition to give the corn a very rank, vigorous start.

This securing a good start in the beginning, is a great help towards raising a heavy crop, and not only makes surface manuring in this way a great deal better than the old practice of plowing under coarse manure, but it seems to answer full as well as manuring in the hill. In this way, with the additional benefit that appears to be realized by means of the clover, I have no doubt that I receive a great deal more benefit from the same amount of manure, than I did when the coarse manure was plowed under for corn.

3d. I not only receive much more immediate benefit, that is to the one or two first crops after manuring, but find that the effects of manure applied in this way last a great deal longer than I have ever found to be the case when it was applied in any other way. For instance—seven years ago last fall I put what manure that was then left, on part of an eight acre lot, which was planted the next spring to corn; and although I have had heavy crops of grain and clover on that part of the field every year since, without the addition of any more manure or other fertilizers, except plaster and ashes, yet every crop showed plainly where the manure was put; and the corn last year, though not as heavy as on the rest of the field, which was manured the fall before, showed plainly how far the first manuring went, and gave a yield of over 130 bushels of ears of excellent corn to the acre. Had not the wire worms injured one corner, and that next to the gate, where the crops had always been the best, there would have been at least 140 bushels of ears to the acre on this part; there was a little over 1,000 bushels of ears on seven acres, and had it not been injured by the worms, there would have been at least 150 bushels of ears to the acre. One acre of the lot was in potatoes.

In regard to the cause of, or reason why, manure is found to be so much more lasting when applied in this way, of course I cannot pretend to give anything that will be certain, positive, or reliable; but my experience tends pretty strongly to the conclusion that it must be connected with or owing to the growing of

clover in some way, though perhaps this opinion, at least in some measure, may be due to the fact that I had no better reason to give. But then I can say this much, that I know I have realized a great deal of benefit in the improvement of land, by the growing of clover, and that I get a good deal more benefit from manure, when applied to fields on which I raise a good deal of clover. F. *Orleans Co., N. Y.*, 1865

MANAGEMENT OF POULTRY.

Every farmer's wife (or housewife who has ground enough around her) who cares for the comfort of her household and the respectability of herself as a housekeeper, will find it indispensable to keep a constant eye on two of the prime resources of her table for luxuries, viz.: the poultry-yard and the dairy.

To realize the importance of the first, it needs but a glance from the plowman's savory scramble of eggs, with the light corn-cake beside it, up to the towering temples of the bridal feast, all cemented with eggs, to convince the thoughtful housewife her fowls are as necessary as her cows.

Have poultry, therefore, if they must shiver in the sleet in the icy tree-tops, rob the grain stacks, or lay in the kitchen corner. If, however, your honored lord's means permit it, have them provided for comfortably, if rudely, which may be done with very little expense, if you save up the lumber and keep your eye upon the odd days which the hands find unfit for labor in the fields. But if you own a homestead, and the preacher's salary, the county tax and the childrens' school bills are made sure, indulge your taste a little and fit up your poultry-yard in a secure, durable and tasteful manner; whitewash, shrubbery and friendly vines, lend great assistance in such undertakings.

The Poultry-Yard.

A poultry-yard is not indispensable, but very convenient, for those who like to have system in this as well as other branches of domestic business.

The advantages are that you can keep your poultry from ranging if you choose, and without confining them in a house; keep your turkeys, geese, ducks, &c., during the morning hours in the laying season, and thus secure their eggs without the tedious watching and hunting for nests free range necessitates. You can also better protect them during brooding season, and it accustoms your fowls to feed and roost in a place of security, where they are conveniently come at too if you need them. Unless you mean to raise your poultry in the yard, a very large one is not necessary for the purposes we have enumerated; and we think the best plan and least expensive is to release them soon as laying hours are over, and give them as free range as possible, that they may derive their subsistence from things not only not valuable but pernicious to the agriculturist, such as insects, bugs, worms, etc.

For your poultry-yard select a dry piece of ground, as far from your kitchen garden and yard, if you cultivate flowers therein, as your personal convenience will allow. Size to be determined by your taste or wants. Enclose it with a picket fence and gates of the same; over any other kind, fowls will escape. A close hedge of osage orange would probably do, if a low fence a foot or two high was made, to prevent their creeping through the shrubs close to the ground—they certainly cannot fly through or over the hedge. On one side of the yard, about four or five feet distant from the fence, and the side most distant from your poultry-houses, feed-coops, &c., place a strong curb; put on this a good layer of finely cracked rock, and top-dress and level with gravel; this makes a comfortable range on which to set your coops for the young brood—securing them from burrowing vermin and the water which settles under them on uneven ground. A row of plum trees outside of this curb, will thrive well, and repay with their shade the services rendered by the fowls in destroying the worms which infest and render plum trees nearly unproductive of late years. There should be a walk to your poultry-house, paved or graveled, so that mud need not deter you from attending them in the worst weather. On the sides of this walk, if your poultry-house has no shed, will be a convenient place for feed-coops and water-troughs; there should likewise be shallow water-troughs and suitable feed-coops convenient for the little broods, while their mothers are kept in the coop during dewy mornings and showery weather. There should be one trough in the yard large enough for the geese and ducks to wash in, when confined in the yard. A clump of evergreens, or a thick set hedge of cedar on the north side, to break the fierce winds, will be found a popular resort in summer's heat, and will furnish beneath their low growing boughs, a dry wallow in winter.

We also vote long life to any brave old forest tree that may happen to be hereditary monarch of this little principality. Under his crown the feathered tribes of his domain will find the out of doors accommodations they so much luxuriate in during summer, and we are sure while they indulge this native taste at this season, the houses will be less subject to be infested by vermin. If small, the poultry-yard will be kept nude by the tenants thereof. If large, part of it should always be kept naked—that nearest the coops of the young,—and the other part should occasionally be turned up for the amusement and thrift of the fowls. Indeed, if large, the yard may be set in part with raspberry, currant, or or some such bushes. You will gather enough fruit the fowls cannot reach, to repay the trouble in setting them; the farm boy will run a furrow or two between them as he passes some day; the yard will look more sightly, and every one has observed how fowls love to cluster about the roots of trailing shrubs. We invariably sow our yards in fall, while the fowls can range out thickly, with rye, enough of which always survives to afford their winter pasture. A HOUSE-KEEPER.

Product of a Cow for Five and a half Months.

MESSRS. EDITORS—I send you an account of what a native cow of mine has done since she calved, which is quite fair, though she is by no means the best cow I have; yet it shows what good care and fair feeding will do. The cow is good size, 10 years old, and calved the first day of January—a bull calf, rather small, got by my thorough-bred Short-Horn bull Prince of Hartford, 5093 A. H. B. I mention this merely to show how a calf will grow when got by a good Short-Horn bull. The calf weighed, dressed, 169 pounds at 9½ weeks old, and sold for $36.78. The cow made of butter while the calf was fatting, $6.50. Since then to 15th of May, she has given from 38 to 44 pounds of milk per day, which has been made into cheese—partly at home and partly at the factory. Allowing 12 pounds of milk to one pound of cheese, and that is high, for the milk is very rich, it would amount to 270 pounds of cheese, which at

20 cents per pound would be,	$56.00
To which add veal,	36.78
Butter made,	6.50
Total 5½ months,	$99.28

The cow is now at grass and gaining every day. She was fed through the winter and spring, good hay, all she would eat, and one feed of roots, two thirds of a peck, and one quart of meal, rye and corn, with a little oil meal mixed with it. The cow is in nearly as good condition now as when she calved, and for aught I can see, will be a good cow for some years yet.

Barre, Mass., May 17, 1865. E. P. HAYNES.

LETTER FROM JUDGE FRENCH.

LOCKPORT, N. Y., June 10, 1865.

MESSRS. EDITORS—The few days since I left you at Albany have given me some pleasant and useful glimpses of agriculture in your great State, which may be familiar perhaps to you and to such of your readers as reside near you, but would be quite new to a large circle of them in New England.

Being myself on a tour of education, it is but fair to endeavor to make others participate in what I may learn. Prominent agriculturists are public property, to some extent, and I trust some of my friends of that description will pardon me if I use their names in some allusions to their favorite pursuits. I hardly know a better school for a short term for a person who is far enough advanced to appreciate the lessons he reads, than may be found in the suburbs of Geneva, N. Y.; and as we cannot well do otherwise than to speak of particular estates by name, we may as well begin with some things we saw

At J. Otis Sheldon's.

For its fertile soil, for the commanding site of its mansion, overlooking broad fields teeming with luxuriant crops, rich pastures filled with choicest flocks and herds; grand old oaks and elms, single or in groves and clusters; copious springs, which fill to overflowing artificial ponds—with the sparkling waters of Seneca Lake stretching out for miles in the distance—for these general features, Mr. SHELDON'S estate is well known as one of the finest in the country. I propose, however, to refer at this time rather to a few details than to enter into any general description. Among the institutions "near Geneva" is the pioneer in farm drainage, JOHN JOHNSTON, and I had determined to visit him uninvited, at his farm. When I reached Mr. SHELDON'S place he was absent, and I requested one of his men to show me the stock, thinking I would cut my visit short, and go soon to Mr. JOHNSTON'S. As we walked toward the pasture, a carriage drove up, and my attendant said, "There is Mr. JOHNSTON, with his son-in-law, Mr. SWAN." I immediately ordered a halt, and introduced myself, and was met with a hearty welcome. I said to him that he was just such a looking man as I expected to see, to which he replied promptly, "Well ye are not at all the man I expected to see; I thought ye'd been older, and a tall aristocratic man; but I am very glad to see you."

Mr. Sheldon returned while we were talking, and soon after we were joined by Mr. PAGE of Cayuga, to whom we are so much indebted for excellent drawings and pictures of valuable stock, and we passed some hours together in going over the estate.

Mr. Sheldon has now nearly a hundred thoroughbred Short Horns, a few Jerseys, and a fine flock of South-Down sheep of almost one hundred. I soon found that in that presence, silence on the subject of Short-Horns was my only safety. What those four gentlemen did not know on the subject, as the saying is, is not worth knowing.

I had passed a night of this week with Paoli Lathrop at South Hadley Falls, and examined his fine stock of Short-Horns, and looked over the herd-books with him till I had a realizing sense that Short-Horn cattle have far more ancestors than British noblemen, but here was Mr. Sheldon, who not only knew every one of his hundred animals by name, but seemed also to know their great grandfathers and mothers as well, and here was Mr. Page, who had a portfolio of portraits of all the famous Short-Horns of the century, and my other friends seeming to know not only this herd familiarly but untold generations of Short-Horns, going back to the bulls of Bashan, and perhaps to Job's cattle.

All I dare to say is, that if anybody in this country has a finer herd of Short Horns than Mr. Sheldon, I hope I may receive an invitation to see it.

The prices paid for high-bred live stock are only equalled by petroleum stock. Mr. Lathrop had just sold a cow and four heifers for about $1,300, and felt quite disappointed that a breeder to whom he had offered $400 for a cow, refused it. A gentleman offered Mr. Sheldon $2,000 for one of his cows, in my presence, and the offer was promptly declined.

What is remarkable in Mr. Sheldon, he esteems the Jerseys very highly, while most breeders of Short-Horns look upon them with contempt. Mr. Johnston was unceasing in his jeers at them, and says it is nothing but fashion that makes anybody keep them. The South-Downs on Mr. Sheldon's estate are a fine flock, and his lambs, many of them twins, are very strong. But such pastures as we find in Western New-York, would convert our common New-England cattle into different animals. Cows all through this region are seen in clover literally up to their bellies, on fields where you might cut two tons to the acre. The Kentucky blue grass is indigenous near Geneva. At Mr. Sheldon's, and at Mr. Swan's, I saw fields of it that had been sown on turf and scratched in, that would give two or three tons to the acre. For grounds near the dwelling, where one cannot afford to keep a smooth lawn, this grass is very suitable, because it gives a green sod when mown, and does not die out like timothy and most other varieties.

A barn on Mr. Sheldon's place deserves special notice. It is 150 by 48 feet, and 20 feet posts, and holds about 300 tons of hay. The floors are tight, but the boards on the sides are open nearly a quarter of an inch for ventilation. We must leave this beautiful estate and its hospitable owner somewhat abruptly, and say something of what we saw

At John Johnston's.

Mr. Johnston, as everybody knows, is a Scotchman of more than three score years and ten, but bright and active as a youth, and as cheerful as a May morning, and if ever he has his photograph taken with his little great-grandson on his knee, I bespeak a copy. I passed a night at his house, and walked over his drained fields, and we talked of drainage, possibly with as much zeal as our friends "over yon" had talked of Short Horns. Mr. Swan's farm of 300 acres, known as "Rosedale," adjoins Mr. Johnston's, which contained 300 before he sold a part. None of this tract was what we call swamp or even wet, it being a rolling clay soil upon a hard-pan, apparently very much like most of the land bordering on the Central railroad from Geneva to Lockport. Until Mr. Johnston began to drain nobody believed draining would at all benefit the land. It was dry enough in summer, and it was supposed that draining would increase the drouth. Now all this 600 acres is drained with tile 30 feet apart, or less, and

the utility of drainage on such land fully established. Mr. Johnston has done more for his adopted country than if he had builded a city, and what is singular, his good work is appreciated in his own life-time. He has made himself independent by raising wheat and feeding cattle and sheep. He has 24 acres of wheat now sown in drills, earlier by several days than any upon undrained land, and the difference of even three days often saves the whole crop from the midge.

One of the chief advantages of draining on such land is, that the crop is earlier. Mr. Johnston has sometimes hoed his wheat between the drills; one year the whole of 23 acres. He practices occasionally fallowing still, to keep his land clean. He has now about 13 acres of *winter* barley, as promising as any I ever saw, being the first experiment he has tried with it, and he seems well satisfied with his prospects. Mr. Swan's farm, like Mr. Johnston's, lies on the hill in full view of Seneca Lake. On his fields where formerly was raised but 200 bushels of wheat from 40 acres, he now gets by means of drainage, about 30 bushels to the acre. I have never, myself, seen any region where the advantage of draining on high land is better illustrated.

My visit to John Johnston will always be pleasant to remember. I trust his light may shine yet many years, and that many may follow in his footsteps.

Had I time and paper, I might tell of my visit to Mr. MOORE of the Rural New-Yorker, Mayor of Rochester, and how we visited the University of Rochester, a model building for its object, and of our ride to Ellwanger & Barry's nurseries, and the beautiful things we saw there; but my march is onward to the West, to observe agriculture and its institutions of learning, of which by-and-by perhaps some report will be made. Very truly yours, H. F. F.

CARE WITH STRAW AND FODDER.

A great deal of discussion has occurred of late years as to the comparative value of straw, cornstalks, hay, &c. The diversity of views, which is obvious, is no doubt owing largely to the imperfect manner in which these different substances are cured and preserved. One farmer, for example, finds the use of straw of great value, keeping his cattle and other domestic animals in excellent condition, with a very little grain or meal. Another denounces it as nearly worthless, as his bony cattle abundantly indicate. On further examination, we find that the first has taken much pains to secure his straw in the best order—the other has neglected it, allowed it to become wet, musty and unpalatable. The same result has taken place with clover hay—one man has it fresh, green and excellent; with another it is black, tasteless, or repulsive, having been washed by rains or become mouldy by partial drying. The same difference exists with corn-fodder—resulting in one instance from timely cutting, and securing in stiff, erect shocks—while in the other the stalks are cut out of season, badly put up, tipped over by winds or by their weight, and drenched, blackened and rotted by long rains. Who can expect his cattle to eat and thrive on this incipient manure?

The season is now approaching when farmers should give especial attention to this subject. Those who are about to cut their wheat, should remember that if harvested before the heads droop and become fully ripe, or while in the *dough* state, the tips of the chaff being yet green,) the grain is better and even heavier—the straw, if well dried, is brighter and more valuable for feeding. Therefore, cut early, secure in good, well protected shocks, until fully dry, and place the straw when thrashed, either under a roof, or else in as well built stacks as are deemed requisite for hay.

Hay should be well and evenly dried—not in lumps or bunches, or in badly dried cocks, where it becomes yellow and sour. A good hay tedder, run by two horses, however valuable it may prove in expediting work, and saving labor in dodging stones, will doubtless be found still more valuable in consequence of the perfection of the hay it will enable the farmer to manufacture.

EXPERIENCE WITH BEES.

EDS. CULTIVATOR—Your paper occassionally gives us some interesting matter relative to bee culture. A little more space devoted to this department, giving us facts relative to the mysterious ways and customs of the honey bee, would greatly interest the inexperienced apiarist—would reveal many facts of vast importance to his future success. The unsuccessful effort of many in this town to make bee culture a source of profit, no doubt is the want of experience in the hidden mysteries of the bee-hive. On the 30th of May two swarms issued from my apiary at the same time. The two swarms united and clustered in one cluster.

I propose to give you the course I took with them, asking information in case I am again placed in the same dilemma. One says secure the two queen bees; then separate the bees; place them in two hives, adding a queen to each. Perhaps if this could be successfully done, it would be the best course to take; but being unable to secure either of the queens, I proceeded as usual, and hived the whole in a common box hive which contained one cubic foot, with a chamber for surplus boxes containing half a cubic foot. I placed the hive on the stand in the apiary after the bees had all taken possession.

The following day they commenced work apparently in earnest. About mid-day they commenced clustering on the outside of the hive in large numbers. Probably one-half the colony had clustered outside. The weather was hot, and the sun shone directly upon the hive. At 2 o'clock they commenced swarming, when all vacated the hive, and all again clustered on a rail of the fence near. I accordingly again proceeded to hive them, not in the same hive, but in one that is more roomy, since which they apparently remain in perfect harmony, and now on the 12th day, have nearly filled their hive and boxes with honey.

Now the question is, does this hive contain two queen bees, or has the one destroyed the other? If two queen bees, will a swarm issue, and how soon? When a swarm is placed in a hive, if by accident the queen is killed, will the colony go on with their work for the season as usual? In case two swarms issue and cluster in one, what method is to be taken to secure the queens if the colonies are to be divided? When a hive of bees will not swarm, but cluster on the outside of the hive from day to day, a sufficient number for a full swarm, is there any method of making them swarm?

North Easton. J. LAKE.

Indiana.—The Thirteenth Annual Exhibition of the Indiana State Agricultural Society will take place at Fort Wayne, Oct. 2-7th. The premium lists of this Society are always liberal, and every facility afforded both to exhibitors and the public.

OUR DISTRICT SCHOOL LIBRARIES.

MESSRS. EDITORS—As your columns appear to be open for the discussion of questions relating to the interests of the rural population, and advocate mental as well as financial progress, I write to make a suggestion regarding that "diffusion of useful knowledge" for the encouragement of which laws have been framed and societies formed, and which is conceded by all to be the first step toward substantial and enduring prosperity. None will deny that the more educated a farmer or mechanic is, the better; and that a system which would give him the opportunity of mental improvement without interfering with the necessary duties of his vocation—that would place within his reach the means of acquiring information whenever interest or inclination prompted him to investigate any subject, is a thing greatly to be desired. But to afford him such facilities involves the necessity of libraries much beyond the ordinary means of farmers and artizans to purchase, and this brings me to what I would propose, viz., a radical reform in that much abused and neglected branch of our common school system—The District School Library.

These libraries were established by law many years ago, to disseminate information of a different grade and character from that taught in common schools, and stringent provisions were made for their support and regulation; but, however useful they might have been at the outset, they now practically amount to nothing. It is possible that I am mistaken, but I doubt very much if there is a dozen School Libraries in the rural portions of the State where all the requirements of the statute are lived up to; I know of many where the best books are scattered and missing beyond the power of resurrection. The system is regarded with indifference, and few librarians will risk a quarrel with a neighbor by insisting on the fulfillment of the letter of the law. By this means some of the books are lost, some are defaced and torn, others carried away by families removing from the district, and who "forget" to return the volumes before going; while others, probably from the same forgetfulness, retain books, sometimes for years, after the legal "twenty days" has expired.

To remedy this, I would suggest that the district libraries of each town be consolidated into a town library, and placed in charge of the town clerk, or of a librarian elected for the purpose; by so doing, the library would be rendered of sufficient consequence to be taken care of. The number of books placed within the reach of each inhabitant would be multiplied many times, and many volumes of great value for reference. For instance, those printed by Congress and State Legislatures, by societies like the American Institute, &c., could be obtained gratuitously, and many works of greater price and value than are now obtainable, could be bought with the consolidated library moneys of the town; furthermore, it is plain that books can be purchased much cheaper when a number are ordered, than they can when bought by single volume. As there would be duplicates of some books, these extra copies might be sold and the proceeds applied to the purchase of other other and later works.

It seems to me that this plan would be of great and direct advantage to a farming and industrial community. Thus if a farmer had a sick or unsound horse, cow, or sheep, suitable books in the town library would inform him of the remedy. Should he desire information regarding manures, rotation of crops, or any other subject, the knowledge could be acquired in this way; and thus in regard to art, science, mechanics, or other topics, for the authorities required for rapid and easy investigation would be available, and it is impossible to estimate the extent of the spirit of inquiry which would be excited by a large library in each town.

I have mentioned this plan to several, and the only objection that has been urged against it, is that the libraries would be placed at some distance from the edges of each town, to the inconvenience of a portion of the inhabitants. This reasoning seems to be futile, when we reflect that under the present arrangement very few of those who live near a district library care enough about it to see that it is kept up, and even if this were not the case, almost every farmer finds it necessary to visit the central portion of his township at least once in twenty days, (how many are there who would like to get along without hearing from the post office once a week?) on business of one kind or another. As to small children, it would often be an advantage to them if their reading matter was selected by their parents. The mere fact that each inhabitant, under the proposed change, would have access to the books of all the libraries of his town, instead of being confined to those of his own district, would seem to greatly overbalance any such objection, and that it would give to farmers and mechanics an opportunity of devoting their leisure to the study of any subject dictated by their interest or fancy without expense, would appear to recommend it to their favorable consideration. I hope that the subject may receive some attention at the hands of those interested in the cause of progress and reform.

Maryland, Otsego Co., N. Y. JAMES A. WHITNEY.

Best Way to Cure Grass for Hay.

The New-Bedford (Mass.) Mercury says that about fourteen years since, Gen. THOMPSON of that town, "who does his own thinking, reflecting upon the mode of hay-making, was led to inquire why it could not be cured as old ladies cure herbs, it certainly being as important in one case as in the other, to preserve the juice. He accordingly experimented and soon adopted his present system:

"On a good hay-day he cuts his grass, leaving off about 9½ o'clock A. M. His men then devote themselves to spreading, turning and stirring up the hay, that the air may pass through it, and *all the external* moisture be thoroughly dried. After dinner this is done again and continued till about 3 o'clock, when the hay is raked into winrows, pitched on to a cart, and stored in the barn. Of course, if the day is not a good one, the hay is cocked and left till the next good day. Nothing is done to prevent heating, though salt, about 4 quarts to the ton, is sometimes thrown over it, from the idea that cattle will better relish the hay; often no salt is used and the General does not consider its use at all essential. This is the simple process. The result is that in the spring of the year we have seen clover in his barn, cut the previous summer, the heads blushing as if just mown, and breathing as delicious an aroma as when taken from

the field. Of course the grass is not cut till it is fully developed—we do not mean dried up. We have full faith in Gen. Thompson's method, because its excellence has been thoroughly tested."

In a note to the *Boston Cultivator*, attached to the above extract, Gen. Thompson says:

"As to the time of cutting my grass, I consider it fully 'developed' when in full bloom, and not till then. At that time the juice has changed its character from a watery substance to a nutritious quality, and that I am desirous of retaining in the hay, a large portion of which is lost by the usual process of our drying. I frequently cut 2¼ tons to the acre, and have no more trouble saving it with one day's making, than with lighter grass, except in such cases I frequently remove a portion of the grass as soon as cut to an adjoining field, for the purpose of drying the external moisture, and giving more room for that remaining in the field." He also says:

"Last year I purchased a *hay tedder*, and find it an invaluable assistant, thoroughly spreading and turning the hay, and doing the work of 15 men, and in a much more thorough manner than it can be done by hand."

ROADS.

As the time approaches which is the season for calling out laborers to work on our roads, allow me to make some suggestions regarding the best application of labor for the mending and construction of country roads. And first I will state what seems to me not to be best.

It is *not* the best application of road labor to plow the sides of an undrained road and leave the furrows where they are turned.

It is *not* the best way to scrape up on the roadway ox-shovels or scrapers full and leave them there as dropped in piles along the road. Even a tired doctor could not sleep on such a road.

It is *not* the best way to fill the holes and cavities of a clay road with gravel or sand.

It is *not* the best way to draw the clay that has washed into the ditches back on the trackway, and especially if muck and grass is mixed with it.

It is *not* the best way to make a nice road-bed which is liable to have water standing on both sides of it, so as to moisten the whole mass.

It is *not* the best way to put clay on a road that is near to a gravel bed or a sand pit.

It is *not* best to select gravel which is full of large pebbles—making the road so rough that the traveller on wheels is shaken as with a quarter ague.

It *is* best always to have the road-bed thoroughly drained.

It *is* best to give the road-bed a smooth and even surface, with as little plowing as possible.

It *is* best, when this is done with the best convenient material, to cover it with gravel, making, year after year, such portions as are gravelled so good as to last several years, so that every year will witness a new added section of good road.

The first thing to be done is to have the drainage made good; next a smooth and gently rounded surface, just sufficient to carry off the falling rain. When this is well done a moderate quantity of gravel or coarse sand, if gravel is not convenient, will make a pretty good road for light teaming. McAdam's leading principle was to have a dry road-bed, and on this to put such covering of broken stone that, when worn down, would make a roof for the road-bed water-tight.

I notice that farmers in many places manage their farms with skill and judgment, and yet when roads, which they use almost constantly, are made under their direction, they exhibit anything but skill and judgment. They select a plow for ease of draft—a wagon for durability, and other articles for use for their good qualities, but the roads under their care, destroy and wear out more value of vehicles, and subject their draft animals to greater strain and injury than is saved by neglect of good road making four times told. It is absolutely wasteful for any neighborhood to use bad roads when good ones could be made. Those who use them most would frequently make a saving by laying out, intelligently, four times as much as they do to keep their roads in good order. Such are the opinions of one who has witnessed the co-incidence of civilization and thrift with good roads in various portions of our country for more than fifty years.

AN OLD MAN.

SMOKE-HOUSES.

N. REED's theory and practice with regard to smoke-houses, do not seem to coincide. He says that a smoke-house built entirely of brick, will be too damp for the ashes, while he recommends one like his own, which is substainlly a brick within a wooden one. Now I have one built entirely of brick except the roof, with a brick partition for ashes, in which they will keep dry any length of time. It is also "founded upon a rock," although *that* is built upon the sand or gravel, so that there can be no danger from fire, though there may be from freshet. By making it dark we find that our hams and shoulders keep better there encased in a bag, with perhaps some brown paper around them, or what is still better, a little cut hay, than anywhere else, though we have tried almost every conceivable method.

E. C. K.

CURING BEE-STINGS

We remember many years ago, in reading the travels of James Backhouse, in South Africa, this distinguished English botanist stated, that when stung by a venomous insect, he sucked out the poison with his mouth, and observed the taste to be distinctly *acid*. Acting on the suggestion here furnished, we have found the best remedies to be alkalies, for the purpose of neutralizing the acid. Saleratus or soda should be made into a thin paste and applied to the punctured spot, which should be kept moistened with it some time. In the absence of either of these substances, fresh wood ashes made into a paste answers well. It is important that a speedy application should be made, before the poison has extended far. The application of mud has been found useful, acting in two ways, viz., by excluding the air and diluting or weakening the poison by the moisture in contact with it, but alkalies are much more efficient. As the season for the stinging of bees is approaching, those who are sensitive to the action of the poison may do well to bear this remedy in mind.

Swelled Head in Turkeys.

I notice in the CO. GENT. of Feb. 16, an inquiry as to a swelling over the eye of turkeys. My son, (age 15,) has been in the habit of curing it for several years, by opening it (when large enough to discharge) with a penknife, and cleaning out the matter thoroughly. We have never lost any by this treatment. I do not know the cause of the disease. We have one now upon which we shall "operate" in a week or two.

Saratoga Co., N. Y. AARON HILL.

PRUNING ORCHARDS.

Is it injurious to an old orchard to give it a thorough trimming out, say in February or March? R. M. B.

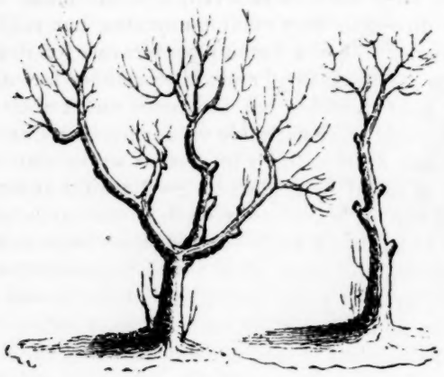


Fig. 1. Fig. 2.
Sprawling and two-story trees.

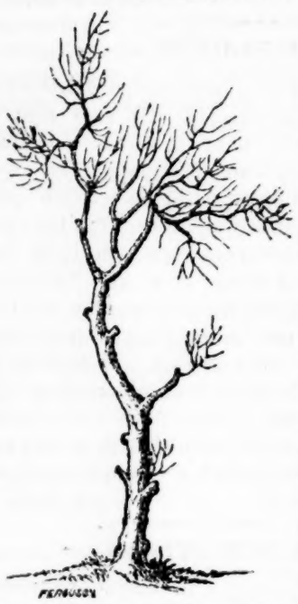


Fig. 3.—*Orchard tree badly pruned, and made into a three-story.*

Giving orchards a "thorough trimming out," as the work is sometimes performed, nearly ruins them. Trees which have been kept in proper shape, need but little heavy lopping of branches. When badly performed the trees often appear like the accompanying figures, fig. 1 being a sprawler, fig. 2 a two-story tree, and fig. 3 a three-story one. If much pruning is required, it should be done gradually, and in successive years, and in winter or spring, before the buds swell, working the heads downwards instead of upwards, as is shown in fig. 4. Trees which from

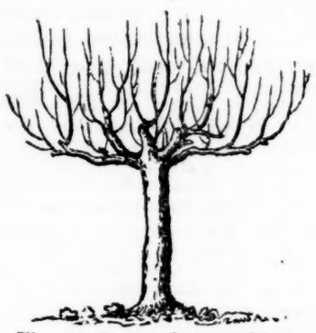
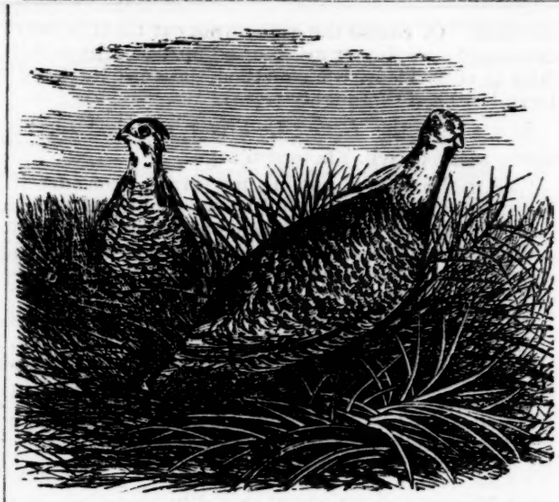


Fig. 4.—*A properly pruned tree.*

age have passed their vigor, are not easily restored.

Horse Chestnuts.—The following item is just now "going the rounds:"

Tons and tons of horse chestnuts go to waste in this country every year, and yet on the Rhine horse chestnuts are used for fattening cattle, and for feeding milch cows, and 100 pounds of dried nuts are estimated to be equal in nutritive value to 150 pounds of average hay. Another authority makes them equal, weight for weight, to oat meal.



[For the Country Gentleman and Cultivator.]

Pinnated Grouse or Prairie Hen---*Cupidonia cupido.* BAIRD.

DESCRIPTION.—"General color of the upper parts brown, transversely barred with blackish brown; wings lighter brown; primaries grayish brown, with spots of reddish yellow on the outer webs. Tail feathers purplish brown, the two middle ones lighter and mottled with brownish black. Loral space and throat, light buff. The long feathers of the neck are yellowish red, dark brown on the outer webs. Under parts white, marked with broad curved bands arranged in regular series, of a grayish brown; under tail coverts white, crossed with brown and margined with black. Membrane over the eye, and gular sack, orange yellow. Bill dusky, feet yellow. Feathers of the legs gray, minutely banded with yellowish brown."—ELLIOT, *Mon. Tetraoninnæ*, Part III, 1865.

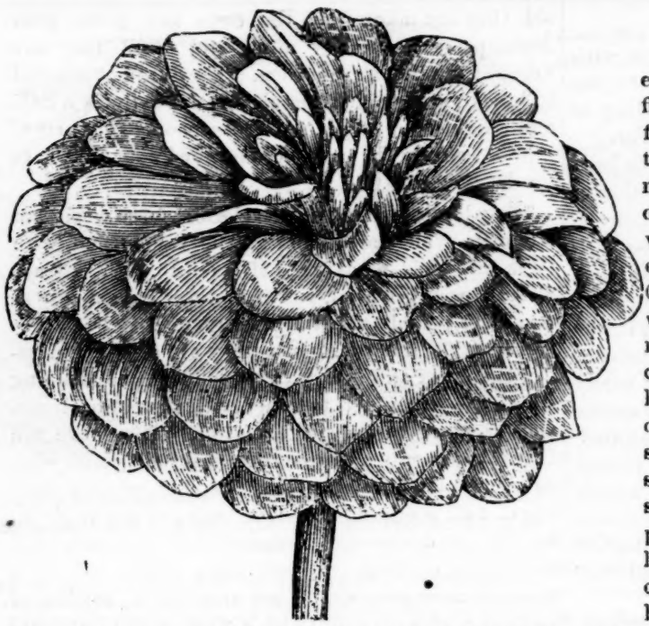
The Pinnated Grouse or Prairie Hen affords a striking example of the destructiveness of mankind. Formerly this bird extended over the whole country, so to speak, while now it is every year moving farther and farther west. They are trapped in immense quantities and sent by all the railroads to the eastward, where they find ready purchasers at *all seasons*. We say "*all seasons*" advisedly, for we have ourselves seen them publicly exposed for sale long after the time prescribed by law. If the persecution of the Prairie Hen be allowed to go on for ten years longer, it is our honest opinion that they will become a *rara avis*, and will not be seen except in the cabinets of museums and amateur ornithologists and sportsmen. Yes, the time will come when fathers who have been sportsmen in their younger days, will, pointing to the stuffed effigy of the then extinct Prairie Hen, recount to them their shooting adventures with glowing eyes and vivid thoughts of the "good old times," when these birds were common in nearly every State, but that men were allowed to kill them off by an unjust slaughter.

The Pinnated Grouse selects his dwelling-place with no ordinary care. No common prairie will suit him, but he must have an open and dry plain shaded with a few trees and interspersed with bushes. In such situations they will be found, if there are any of them in the vicinity.

The Prairie Hen roosts on the ground. Several frequently roost in the immediate vicinity of each other. Especially is this the case when they are in "packs," but we are not certain that they pursue the same plan when they have young broods.

The Prairie Hen can be easily domesticated, and will breed in that State.

Philadelphia. J. P. NORRIS.



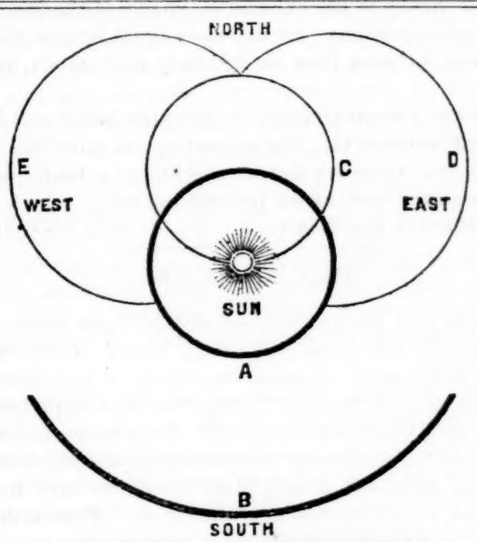
THE DOUBLE ZINNIA.

Among the modern introductions nothing exceeds in value the Double Zinnia. It was first presented to the admiration of European florists by VILMORIN of Paris. Every attempt to produce double flowers from the single Zinnia had failed, and there was but little hope of succes in this direction. The seeds from which the double flowers were at last produced, were received from the East Indies by M. GRAZANI of Bagneres, France, but how they were originated or came to India, remains a mystery. The first double flowers seen in this country, were grown in 1861, several parties having imported the seed. About one-third only of the plants grown from the imported seed produced double flowers, the others being single or semi-double. The double flowers showed but little variety in color, being of a pinkish red, only varying a little in shade, and lacking the variety and brilliancy of coloring of the old Zinnia elegans. In other respects, however, they were fully up to the expectation and the representations of European florists, being perfectly double, finely imbricated, and much larger than represented.

During the season of 1862 we observed a great improvement in this flower. The colors were much better, and of greater variety, while two-thirds of the plants grown, either from American or French seed, have double flowers. In a few years we expect the double will show the same variety and brilliancy of color as the single Zinnia, and then, or even now, for a brilliant and enduring show on the lawn or in the garden, we know of nothing to equal this flower. It seems perfectly adapted to our climate, and will endure drouth or heat, and also to our habits, for it will flourish with the greatest neglect. The plants grow from two to three feet in height, commence flowering early, if grown in a hot-bed and transplanted in June, and will continue until destroyed by frost, all this time giving an abundant show of flowers, no matter what may be the weather, without flagging for a day. The flowers are very enduring, and the same blossom will be in perfection at least a month, and often six or seven weeks, before beginning to fade.

Seeds may be sown in the open ground, as for hardy annuals, but the better way is to start them in a hot-bed or cold frame, and transplant as early as possible. Not one in a thousand will be lost in transplanting.

Rochester, N. Y. JAMES VICK.



CELESTIAL PHENOMENON.

The above diagram gives the outlines of a most beautiful appearance in the sky, which we had an opportunity of seeing on Friday, the 26th of May. At 10 o'clock in the morning, at about 13° from the sun, was to be seen a dazzling halo, (marked A in the diagram,) almost as bright as the sun itself, and remarkable for the brilliancy of its rainbow hues. Farther to the south, about 55° from the sun, appeared the quarter of a circle B, also highly colored and bright; each end rested on some light hazy clouds. On the north a circle, C, having its centre in the circumference of the first, had its circumference to pass through the centre of the sun. This circle was white, distinct and complete. To the east and west the parts of two other circles, D and E, were seen. They were larger than than the last; their circumferences issued from the northern point in it, and turning to the east and west intersected the first described circle (A,) at a point a little south of the sun. These segments were white and shadowy. Thus we had at one view, two complete circles and the segments of three others, two having the sun in the centre, and three having the sun in their circumferences. Two chromatic and three colorless.

The weather for some days previous had been fine and springlike. The day before the wind had been from northeast, and had shifted on Friday to northeast by north. The day was hazy, with some light clouds to the east and south. We were probably on the western edge of a light though extensive gale, then passing to the east of us. Thermometer 70° and barometer 28.9, with but little variation before and after. The circles lasted from ten to two, when they slowly disappeared. Since then the weather has been very fine. FURMAN LEAMING.

Romney, Tippecanoe Co., Ind., May 29, 1865.

COTSWOLD SHEEP.

[The following valuable letter was written with reference to the prizes recently offered by us for Essays on the Breeding, Management and Feeding of Mutton Sheep, and was highly commended. EDS.]

BREEDING.—A flock of Cotswold sheep can be bred by first purchasing a few ewes as near perfection in the eye of the breeder as possible. Observe their defective points if they possess any. Couple these with a thorough-bred buck whose points are all good, but those where the ewes fail should be extremely good. By pursuing this practice and persevering in it, defects of any kind may be eradicated, and the breeder will see with satisfaction a flock gradually but surely coming up to his standard of excellence. He of course must weed out the inferior and defective ewes annually, and fill their places with the young and perfect ones. This system involves the necessity of wintering the lambs in order to select the most perfect ewes after maturing. This is the system I have adopted, and after several years of experience am well satisfied to pursue.

My standard of excellence comprises: 1st. Constitution. 2d. Size and symmetry. 3d. Wool.

This breed should not be kept in too large flocks. My usual number for several years has been about 35 breeding ewes, all of my own breeding.

KEEPING—They have pasture only during its season, are never housed in the summer, and have salt given them once or twice a week, as they seem to require. They should have access to pure water at all times. In the winter are fed on clover hay (mostly) three times a day; if not in good condition, are allowed about half a pint of grain each—corn and oats, or barley, per day, with an occasional feeding of roots; are housed in a well ventilated stable supplied with water, and allowed the range of yard or field in fine weather. They are fed hay in racks made with two horizontal boards a proper distance apart, made to slide up as the manure fills up, (pattern taken from Co. GENT.) These racks are simple, easily constructed, and I like them better than any other. Feed should be increased as the lambing season approaches.

LAMBS—Are dropped the latter part of March or fore part of April. Usually raise from 120 to 130 per cent., and make every ewe bring up a lamb. If one loses her lamb, I take her and tie her head so she cannot smell the one designed for her adoption. They are kept alone for a few days, and the lamb assisted to nurse; they soon become attached to each other and are allowed to go with the flock.

When the lambs are two or three weeks old a number of the best bucks are selected for breeding, the remainder castrated and the ewes docked. About a week or two later the wethers are also docked, and all turned to pasture. Grain is continued for a few days until the grass is good. The pasture should afford a variety of grass, and not be stocked too heavily.

SHEARING.—This is usually done about the 1st of June. A few days after the ewes are shorn, if they have ticks upon them, they will leave and seek shelter in the wool of the lambs; these are dipped in a strong decoction of tobacco, which exterminates the vermin, and is also thought to improve the quality of the wool.

WEANING.—When the lambs are about four months old, they are taken from the ewes and given good fresh pasture, (usually aftermath) until they are brought into winter quarters. They are not allowed to breed; are stabled, get clover three times a day, and a light feed of grain daily—about six quarts of ground corn in the ear and unground oats mixed, to the flock of thirty.

Early lambs winter better and shear more wool than late ones. They are shorn at the same time with ewes, and yield an average of seven to eight pounds washed wool per head, worth in these days nearly as much per pound as that of finer grades.

About the first of August they are divided. I select the finest and best ewes to replenish the breeding flock; the remainder, together with the old or imperfect ewes, are turned off to fatten. They have the best of grass only until the frosts injure it, which with us occurs generally about 15th October, when a feeding of half a pint of new corn each per day is given. As the season advances the quantity is increased, until they have all they will eat clean, which will be a quart or more per day. They also get a feeding of roots or apples once or twice a week, and what good hay they will eat, until about the 15th or 20th of December, when they are sold to go to the New-York holiday market, usually selling for from two to four cents per pound, live weight, more than the price paid for good to prime mutton.

I have made wethers, with the above treatment, weigh at twenty or twenty-one months old, over two hundred pounds; they were extra, however. Most breeders and feeders pursue a different course from the above, yet after several years' trial I am inclined to continue it for the following reasons: 1st, I get the growth of two grass seasons with one wintering; 2d, secure the best and heaviest fleece of wool, which is no small item in these times; 3d, they get sufficiently fat and heavy to meet the requirements of the majority of good butchers; consequently there is more competition for them than though they were much heavier.

I deem it more profitable to keep the lambs over for several reasons, viz., the advantage of selecting for breeding; the heavy fleece; the higher price for fine mutton over lamb at the holiday markets.

Dutchess Co., Dec. 29, 1864. R. G. COFFIN.

HEN MANURE.

I will give you the method which I have practiced for the last few years. Take one bushel of hen manure, one bushel of ashes, one-fourth of a bushel of plaster, mix it thoroughly together, and apply one-third of a handful to each hill. It is very essential that the manure should be thoroughly pulverized, and for this purpose I usually place it on the barn floor and let it dry, if it is not already so. Place a thin layer on a portion of the floor, take a common flail and commence to thresh it until very fine; push this one side, take another flooring, and proceed as before until you have finished. I have tried several methods to crush the many lumps that are in the manure, but have found this much the quickest and easiest. My practice has been to apply this to the young corn as soon as it shows itself above the ground, which gives it a vigorous start. L.

THE BLACK KNOT.

MESSRS. EDITORS—In looking over the columns of the COUNTRY GENTLEMAN, Cultivator, Gardeners' Monthly and Horticulturist, together with a few other agricultural and horticultural publications of the past year or two, I noticed many articles, some of inquiry and some for instruction, upon that widely known disease that attacks plum and cherry trees, called black knot. There seems to be a very wide diversity of opinion among various writers upon this all important subject. Some believe it is caused by an insect called the curculio or plum weevil, which has a particular liking for this choice fruit. And such as hold to this opinion advance the idea that when the fruit becomes scarce, so that the weevil have none to deposit their eggs into, it resorts to the tender wood of the plum and cherry, and deposits them there for the continuation of their race, and that causes the knot or knurl. Others attribute it to other sources, such as the disease of the sap, but the greater majority univerally agree that the curculio is the only cause of this disease. I notice in the CULTIVATOR, page 68 of the present volume, that you, Messrs. Editors, in reply to F. Manter, said, "the cause of this disease has not been determined;" and you might truthfully have added that it never will be so long as close and shrewd observers differ so widely upon the origination or true cause of this much dreaded black gum as some term it. As so much has already been said upon this subject, perhaps it would not be worth the while for me to occupy the space in your valuable sheet to state my experience of this malady, but trusting that it may be of some interest to a few at least of your numerous readers, I will state a few facts that have come under my notice. I do not claim to know the true cause of the disease, but am quite positive that those are in a great error who believe it to be caused by the plum weevil. I live in a section of country where the curculio abound in countless numbers; they not only destroy the plum crop if allowed to take their own course, but they make almost as savage attacks upon apples as that of the more tender fruits. I have made the plum my special favorite for 14 years, and have taken great pains during this time in selecting the best that could be found in this country. I cultivate about 190 plum trees of various sizes, 100 of which are in bearing, comprising nearly all the choicest as well as the most tender varieties, such as Green Gage, Coe's Golden Drop, Washington, Jefferson, Imperial Ottomon, Bleecker's Gage, Imperial Gage, and other varieties too numerous to mention in this article. And among all these I flatter myself to believe that not a solitary black knot can be found upon a single tree, and if my memory serves me right, I have not cut off more than two or three of these tumors during the past two years. I find that some varieties are much less affected with the knot than others, all under precisely the same treatment; for instance I have never in my life observed one of these warts upon the Washington, Imperial Ottomon, Coe's Golden Drop, &c., while the Frost Gage, and all the Damson varieties are more or less subject to it. I have observed that the plum and cherry trees in certain localities are much freer from these excerescences than upon those that are situated upon different locations. Yet I believe the disease to be more or less contagious in all places and in all situations, if allowed to take its own course.

Let the cause be what it may, if the cultivators of the above named fruit trees would exterminate each and every knurl as soon as they make their appearance, there would in my estimation be but little fear of its ever becoming troublesome.

Some three or four years ago my father-in-law gave me a number of plum trees of different sizes; some were quite large, and others quite small; many of them were so badly affected with the disease that he told me while digging them up that he did not know as they would be worth setting out. I told him that I would just as willingly take those as any, for I did not care anything about the knots. So I took them home and applied my usual course of surgical operations, which I have found to be the only means that will save trees that are thus afflicted. After making numerous amputations with my saw and knife, I covered the wounds with a solution of gum shellac varnish, to exclude the air from the cut; then carefully set them out, and since that time I have not observed a single knot upon one of these trees, although they comprise some of the very worst varieties for knotting, such as the Damson and Frost Gage; the latter, Mr. Downing says, "appears to have originated in Fishkill, Duchess Co., N. Y., where it has, for many years past, been most extensively cultivated for market; but of late has been so subject to knots that it is not now much grown." In conclusion I would say that I have fairly cured them of the disease by simply cutting them off, as above stated; but I notice that the remarks to an inquiry in THE CULTIVATOR of 1861, page 32, contradicts my statement, but I can give abundance of the most positive proof, affirming that my statement is a true one, although any one not familiar with the facts, to look at the trees at the present time, would very naturally come to the conclusion that such a thing as a black knot never could possibly have been upon one of them. They all look perfectly healthy and vigorous, showing no signs of the disease.

Prospect Hill, Washington Hollow. C. R. C. MASTEN.

Remedy for Bugs on Melons and other Vines.

Seeing an inquiry in the CO. GENT. as to the best way of saving melon vines from the ravages of the bug, I give you the plan which I have used for some years, and found invariably to answer the purpose.

Take a roll of the best cotton batting, draw off pieces as thin as possible; place these over the young plants, putting a small stone or handful of dirt on each corner of the cotton, to keep it from being blown away, and your plants are effectually guarded. A pound is sufficient for several hundred hills.

I have tried many methods, and found none as cheap, convenient or effectual as this. The cotton acts as a very thin netting, allowing the air and rain to have free access to the plant, while it entangles the feet of the bug should he alight upon it. You will also find that plants thus covered will become more healthy and vigorous than those left uncovered, though neither should be troubled by bugs. These remarks apply equally well to squash and cucumber vines.

New Hamburgh, N. Y. J. T.

Feeding Rye and Clover to Brood Mares.

MESSRS. TUCKER & SON—"H. W. C." Glen Cove, Queens Co., N. Y., answers W. R.'s inquiries in regard to barley and rye as food for brood mares. I also recollect that similar inquiries have been made as to the use of clover. As it regards barley I am profoundly ignorant, as it is never used in Kentucky, where my experience was acquired; but *rye* and *clover are decidedly* injurious to brood mares. A lot of say 20 mares, grazed on clover and green rye, or fed with the matured grain, will not produce over 25 per cent. of colts. The injury they sustain is in failing to prove in foal. Either plant will produce abortion in the very early stages of pregnancy, *three times out of four*. The owners of stallions and jacks in Kentucky, in contracting to insure pregnancy, always prohibit the use of either after the third or fourth month. The grazing of either is comparatively safe, and but seldom has a bad effect; but the ergot found in the matured grain of rye, will produce abortion at all stages, and is a very dangerous food in the breeding stud.

H. C. W. says, "boiled rye fed blood warm, will bring a mare in season to a certainty, in from three to five days," and that he "never knew such treatment to fail." I have no doubt but his recipe is a never-failing one, and that she will continue in season just as long as he will continue to give such food, but will *never be impregnated*. The philosophy of the thing is, that rye as a food unduly excites the procreating organs, and in over-doing the thing the mare fails to prove in foal. Any food or medicine that excites these organs unduly, is fatal to propagation if long continued. The fact that rye will bring a mare in season, as stated by H. C. W., is proof positive that it will excite these organs, and although it might be used merely as an excitant, it is improper as food, and inadmissable.

In practice for thirty years, I know it to be fatal either green for grazing, or in the condition of meal from the grain, in at least, as I before stated, *three* cases in *four*. ANTHONY KILLGORE. *Stewartsville, Mo.*
Late of Fern Leaf, Ky.

CONTROLLING THE SEX IN BREEDING.

EDS. CO. GENT.—I see in the Scientific American for May 6th, page 293, a Mr. A. de Terrandi professes to have discovered a way for controlling the sex in breeding, and further says, it has been in successful operation for several years at La Hotte, near Fort Liberty, Hayti.

A few years prior to 1860 I supposed there was some truth in the above, as I had a North Devon bull and mostly all of his calves were heifers. I had noticed him several times in serving cows that his left testicle had gone up, while his right hung down. While watching the effect of this, to see what came of it, I came across an article in the old American Farmer for 1823, where some man had thrown a boar to castrate him; after taking from him the left testicle he had gotten loose and gone off to the woods with the right one in. They were unable to get him again for several years, and they professed to have noticed that all the pigs he got while in this state were males.

So, thought I to myself, I have certainly found out just what so many breeders have sought for so long without success. Now I can have all my pigs males, and all my lambs females. Now I am fixed certainly, but before I tried the thing generally, I would try it on some hogs.

So to have the thing quite sure I thought I would try it on both sides—the same on the female as the male. So taking a boar, I took out his left testicle and turned him into a lot with three sows, one of which had her left ovaries out, the other the right ones out, and one not spayed. The next lot had a boar with his right testicle out, and three sows fixed as the others had been. The next lot had a boar and three sows, fixed as the first three had been.

Now for the result: Every sow had from seven to nine pigs. There were not less than three nor more than five male pigs in every litter, or just as near half of each as there could be.

Having proved the thing a humbug, I fattened and butchered the hogs without trying it again, being perfectly satisfied with the result of the experiment.

If any one has tried this same thing on cattle or sheep, I hope they will publish their experience.

Zanesville, O. J. BUCKINGHAM.

HOW TO RAISE TURKEYS AND DUCKS.

The house for your turkeys need not differ essentially from your hen house. The roosts should be stouter and farther apart, and the turkey likes a lofty perch. Their nests should be larger and if you confine them in the morning until they lay, they should have plenty of grain and clean water to keep them quiet. But this confinement to the house is not desirable where there is a poultry yard. We always provided a few shocks of fodder or some little brush heaps, and let them indulge their taste for stealing their nests. The first laying of eggs we sometimes set under hens and raise as chickens. The second laying never exceeds ten eggs, and these we let the layer brood on herself, of course giving her the full complement of two dozen if we can. However we do not particularly recommend this plan, for common hens are hardly careful enough to raise turkeys, and the chicks brought out later by the old turkey hen never attain full size.

Young turkeys must be protected from the damp and kept within the enclosure for several weeks. After that they prosper well with the freest range. To improve the breed of your turkeys, procure every year a choice male from a stock different from your own, and for every male keep a dozen of the finest, largest and gentlest of your hens. The black are usually the hardiest of turkeys, and the white and light colored varieties the gentlest. A turkey hen may be kept about seven years in your yard profitably.

Ducks—Are easily domesticated, great layers, and esteemed for the table. It is best to partition them off a little place to themselves, for while they disturb no other fowl, they are subject to much annoyance themselves, if housed with different species. They may, in laying season, be furnished with food and water in their house, or kept in the poultry yard until the middle of the forenoon. They usually lay every day by that hour, and most varieties care very little where they deposit their eggs—the Muscovy being an exception to the rule. Ducks are usually hatched under the common hen; trim off their tails when taken out of the nest, and treat just as chickens, except to give them free access to water, to which element will they instinctively take, despite the distressing remonstrances of their anxious foster mother.

Since writing the above article we have received through a kind friend a pair of Swiss turkeys, from the yard of Mr. McHatter, near St. Louis, imported by him direct from Switzerland. They seem to be very hardy, and are very gentle; color a spotless white, with which their brilliant black eyes contrast very effectively.

LETTERS FROM EUROPE---I.

The Prussian Ministry of Agriculture—International Exhibitions of the Year—Mr. Klippart's Mission—Samples of German Wool—Agricultural Education in Prussia—Public Lectures—Thaer's Statue.

BERLIN, May 25, 1865.

MESSRS. EDITORS—In writing to you from Germany it will certainly not be out of the way to commence at the *Hauptstadt*, or principal city, although there is evidently more attention paid here to military than to rural affairs. The latter, however, are by no means neglected, but are under the especial charge of the Minister of Agriculture, VON SELCHOW, with a *Landes-Oeconomie-Collegium*, or State Board, to assist him. The department occupies a large building, in which the central bureau is located, besides containing a very fine library, to which a reading room is attached. On ascertaining that the *Scientific American* was the only journal received from our country, I took an opportunity of presenting the chairman of the board, GEH. RATH. WEHRMANN, with a copy of the COUNTRY GENTLEMAN, which I hope will be found there hereafter. The cafes and reading rooms here are much better supplied with English than American papers, which is rather strange, considering how much interest the Germans take in the United States, especially since the late war. The spirit of progress is very apparent in Berlin, it being a great centre of industry and commerce, and the arts and sciences are cultivated here to a high degree. American inventions, as well as stocks, are much in demand, such as sewing machines, agricultural implements, and even petroleum, and I lately saw a wagon parading through the streets labelled *American Ice Cart*. A permanent industrial exhibition has been established here, and I wish we were more fully represented.

There are quite a number of exhibitions, several of which are international, to be held this year, one of which, at Stettin, commenced on the 12th inst. I regret that I was unable to be present, so as to give you an account of it, but I expect to attend the International Exhibition at Cologne, which opens June 2d, or perhaps the one at Dresden during the latter part of the month. There are also several minor exhibitions in various sections of Germany, which would be worth seeing, to say nothing of the other parts of Europe, such as Dublin and Oporto, but then one cannot see everything. The one at Cologne will be the best from all accounts, owing to its central location.

I have lately had the pleasure of meeting the indefatigable Secretary of the Ohio State Board of Agriculture, Mr. KLIPPART, who has come abroad for the express purpose of visiting the agricultural colleges of Europe, with the view of organizing one such institution in the best possible manner at home, in accordance with the recent Act of Congress. As lands have been granted to every State in the Union for this purpose, Mr. Klippart's Report will be equally valuable to all, and will be awaited with much interest. The subject cannot be too thoroughly investigated, as so many unfortunate mistakes have already been made in this matter. It would be well if each State could institute separate inquiries, so as to compare notes. I have just heard of the passage of the Cornell University bill, and it seems to me that New-York has an opportunity now to establish an institution far in advance of any other State, as both Congressional and individual munificence are combined here. I have also seen Dr. Czapkay of California, who went to Stettin as U. S. Commissioner, in company with Mr. Klippart, who is also Agent of the U. S. Agricultural Department. The latter procured at this place several thousand samples of wool, including duplicates, at my request, for the New-York Agricultural Society, with the view of determining the question as to the superiority of foreign wool, about which there has been so much discussion of late. As these are the very best samples to be had in Germany, the comparison cannot but be a very satisfactory and conclusive one. I also hope to get samples of grain and other seeds for your Museum, in fact whatever I can find illustrative of the agriculture of the country.

There are four agricultural academies in Prussia, namely, Eldena, Proskau, Poppelsdorf, and Waldau, besides many schools of a lower grade, to which I shall allude at another time. I shall endeavor to visit one or more of these academies, in order to give you some description of them. In addition to these separate colleges, there are agricultural departments connected with each of the two universities of Berlin and Halle. There is also a veterinary college at Berlin, with seven professors and two hundred students, which is very complete in all its arrangements. This is part of the agricultural department of the university, which, however, is not yet fully organized. The department here, as well as at Halle, is an experiment to ascertain whether it is best to have agricultural colleges isolated or connected with universities. The latter are so complete and well endowed by the government, that the success of the experiment would by no means justify us in dividing the agricultural fund among all the small sectarian colleges to be found in every State. The experiment so far has succeeded very well, especially at Halle, the students being allowed to attend lectures during the latter part of their course, in philosophy, history, literature and ethics. There is no reason, however, why a well endowed and complete agricultural institution in our country should not be able to furnish its students with as many lectures on subjects of general interest, as they would have time to attend to in connection with their special studies. There is no model farm connected as yet with the department at Berlin, but the students make excursions to the neighboring estates. The institute at Moglin, founded by the celebrated Thaer, is no longer in operation, the land being cultivated by his grandson, who is Professor of Agriculture at Berlin. There is a fine statue of Thaer in front of the Academy of Architecture, with the inscription, "Albrecht Thaer, a grateful country to the founder of Scientific Agriculture."

There have been public lectures delivered once a week here during the past winter, on agricultural topics of general interest, as the food of animals, the utilization of sewage, &c. On the latter subject a very important work has just appeared, being a report made to the Minister of Agriculture by three members of the *Landes-Oeconomie Collegium*.

I cannot say that I have seen much here of extraordinary interest in the agricultural line, unless it was a cow with two heads, a breed which I would not recommend, as although a double eater, it did not appear that she was a double milker. At an estate not far from town, which I visited with Mr. Klippart, I saw some beautiful cattle which are kept on the soiling system the year round, never being allowed to go out of doors, I understood, and they certainly did not look the worse for it. I must reserve, however, a discussion of this and other subjects, for a future occasion.

Berlin, Prussia. J. L. T.

SALT FOR CATTLE.

The price of salt having considerably advanced, with all other necessary articles, has led some farmers in the west to make the experiment of withholding salt altogether from their farm animals. The subject has led to considerable discussion in the papers in some quarters, whether salt is or is not really essential to the animal economy; some arguing that neither men or animals can long exist and maintain any degree of tolerable health without the use of salt. On the other hand it is asserted that in some parts of the world salt is used neither by the human race nor by dumb animals. In stating this latter proposition, if it could be proved that the deficiency is not made up indirectly in some other form in the food consumed, it might appear conclusive that salt is not essential to the health of animals. The farmers along the entire length of the southside of Long Island never have occasion to feed salt to their stock, and I presume it is the case over the whole width of the Island, and yet all stock get a full supply. The winds from the sea sweep over the lands, loaded with saline particles, in the form of fine spray, which finds lodgment upon the herbage, and everything with which it comes in contact. During a severe storm I have seen it seven miles from the ocean, lodge upon the windows, and when dry form visible crystals of salt. From this source the cattle and sheep obtain so large a supply of salt that they seldom or never manifest any disposition to seek it in any other form. It is asserted by those who have investigated the subject that generally along the sea-coast for 100 or more miles in the interior, that analysis shows that soda is the prevailing alkali in the soil, while still farther in the interior, along the same range, potash prevails in the absence of soda. It is inferred that the soda is deposited by the winds from the ocean, loaded with salt spray.

It is stated that in Brazil, Uraguay, and the Argentine Confederation, where immense numbers of cattle, horses and sheep are reared, that salt is never supplied to them by the farmers. I think that on investigation it would be found that nature has supplied salt or its equivalent through natural sources from the soil, rendering a supply in any other form unnecessary.

It is well known that blood contains a large percentage of salt, and salt is given off from the system through all of the excretory organs, the skin, kidneys, &c., in considerable quantities daily; hence the supply must be maintained or the animal must languish. Among some nations it is asserted that criminals are condemned to subsist without salt as a punishment for their crimes; the privation is represented as most tormenting.

In all Europe, from time immemorial, salt has been largely supplied to domestic animals, and it is claimed by some of the most profound writers in those countries that animals cannot be maintained in a state of health without it.

In the Memoirs of the Royal Academy of Sciences at Paris, are several papers showing the great advantages of salt, both as a manure and for cattle. It is here asserted that salt given with the food of cattle augments its nourishment. That in proportion to the quantity of salt eaten by cattle, the effects of the augmentation are perceived. That no ill consequences follow its use when given without stint. It is said these propositions are supported by unquestionable evidence, and the trials of many persons.

Crau, in the jurisdiction of Arles, in the county of Provence, France, has an extent of six leagues by three, the whole surface of which is covered with small rough stones, and not a tree or bush to be seen upon the whole district, except a few scattered on the border; yet on this apparently barren spot, by the free use of salt, more numerous flocks of sheep are qred and reared, than upon any other common of equal extent in the kingdom; and what is not less remarkable, the sheep are healthier, hardier and endure the severity of winter with less loss, though they have fewer sheepcotes for covering, than those bred in more luxuriant pastures, and that have the advantage of convenient shelter. Add to this that the wool of the flocks bred and brought up in the Crau is not only of the finest, but bears the highest price of any in France. It is concluded that these surprising effects are consequent upon the unlimited use of salt.

It is farther stated that it has been satisfactorily proved by trial in certain districts in France, that herds on the same farm have been separated into two lots, giving one half a full supply of salt, and giving none to the other half. In less than a month there is a marked difference in the appearance of the animals, in the sleekness of their coats, in their growth, and in their strength and firmness of labor; and these effects are produced with little more than half of the food consumed by the cattle to whom the salt is given.

In Spain, where the finest wool in the world is produced, large quantities of salt are given to the sheep; to which is attributed, in a great measure, the cause of the fineness of the wool.

In England a thousand sheep consume at the rate of a ton of salt annually. It is supposed to destroy the fasciola hepatica, or fluke worm. It is said that 1,000,000 tons of salt are given to animals in England annually, which would seem almost incredible.

Cato, 150 years before Christ, recommends salt for cattle, hay, straw, &c., as also does Virgil. In Germany and Spain it has been esteemed essential for sheep from the earliest history of those countries. In 1570, Conrad Heresbach commends it as being a certain prevention of the "murrain or rotte."

Independent of all the evidences that I have here cited, going to prove that salt is designed as an essential condiment, both for the human and brute creation, we have the unerring instinct of animals to show the demands of nature for this substance. In all parts of the world where salt mines or springs are found, there wild animals congregate, from hundreds of miles distant, to get a supply of salt. In our own country, the Big Bone Licks of Kentucky are noted for their having been the resort of all kinds of wild animals for the purpose of licking the water that issues from the salt springs of that locality. Here, in early ages, those monsters of the wilderness, the mammoth and the mastodon, which have long since become extinct, once congregated in immense numbers, with numerous other species of wild animals, and so eager to supply the demands of nature for salt, that deadly conflicts arose among the various species, and thousands were slain in the vicinity of these "licks," where their bones are still to be found. Numerous

other licks in the various parts of the same State show similar evidences of their having been the resort of wild beasts. Deep worn paths leading to the springs are even now, at this day, to be seen, where innumerable herds of buffalo rushed down the declivities in pursuit of salt. H. P. B.

POULTRY-HOUSES.

It is best for the different varieties of fowls to have separate apartments. In a cold climate, to have the hen-house adjoin or be over some office in which there is kept constant fire, is very good, though we admit they are not very silent or desirable neighbors. Any way, make the house capable of as much warmth as possible. The door should open to the south, and above should be a long narrow sash, glazed and protected on the inside with wire netting or a lattice work. This window is for light, and should be removed in summer. On the opposite side there should be another window for ventilation, but placed so as to avoid a draft over the roosts. This should be latticed, and have a board shutter for winter.

The fowls should have access to their house through a trap-door. A pole with a chip cut out or strips nailed on at intervals should lead from this to the roosts. It is well for the roof of the poultry-house to project considerably over; the corners supported with stout posts. This costs little more and affords shelter without confinement to the fowls. It always, particularly on the south side, gives a good place in winter, to put feed, water-troughs, shallow boxes of ashes for wallows, also supplies of gravel, lime, and all etc. necessary for *fowl* comfort in *foul* weather. Sufficient roosts should be provided; it is said those of cedar will not be disturbed by vermin, and we know furriers use cedar boxes as noxious to moths. These roosts should be about two feet apart for barn-yard hens, but farther for turkeys, and not near enough the walls to defile the nests beneath with the droppings, i. e., if one room constitutes your poultry-house, which it usually does outside of books and bird-fancier's arrangements. There certainly should be separate apartments for turkeys, and common hens, and the ducks can be easily accommodated with a little domicil partitioned off from the turkey-house, for they seldom make any other use of their apartment except to lodge in it.

Nests of long boxes divided into compartments of about eighteen inches, with a narrow strip at the bottom front, and a cover above, are as good as any. But the most successful poultry-house which we ever entered, was a perfect chaos of old bones, baskets, barrels, &c. The hens seemed to revel in the confusion, availing themselves of all the cuddies and crannies of this nondescript apartment for making their nests in, and fancied secresy. The truth is, in the successful management of all animals, our aim should be not to thwart but guide their instincts into the ways most profitable to ourselves. Hence if you have no poultry-yard, and allow your fowls free range, notice their fancies, provide a dry nest and nest-egg, and verily your gains will probably exceed in the poultry line those of the most completely fixed fancy hen-wife. But that your garden and flowers shall equal her's, I will not indorse.

Always keep on hand for nests, dry leaves or grass; hay is rather stiff, and if you use straw the hens will scratch it out in search of grain.

To have your hen-house rat-proof should be your anxious care. To have the floor even extending a foot or more beyond the foundation, is a good precaution. This, covered with a coat of tough clay, pounded down firmly and smooth, makes a good floor. To build on blocks set considerably under the corners, is likewise safe, but makes an exceedingly cold habitation.

Your houses should be all thoroughly cleansed and whitewashed in the spring, nests scalded out and whitewashed. This for the hen-house, should be repeated several times, and in old decaying ones at least once a month.

All your fowl-houses should be swept—walls and floors—weekly, and lime sifted over the floors. Whenever a young brood is taken out of a nest, purify it thoroughly. Keep an ample supply of clean inviting looking nests for your hens, well supplied with nest-eggs, for it is desirable to let your hens keep and brood in the nest of their own choice. None but careful quiet persons should be allowed to attend poultry, and enter their houses. The afternoon is the best time to visit the house, when the laying is chiefly over.

In your egg-basket keep a memorandum book and pencil, to mark the eggs you set and the date of the setting. If you find a hen on for two or three successive days in the confirmed notion of brooding, allow her from 15 to 24 eggs, according to her size and the season. Always set two hens at a time, so when they hatch you may give all the chickens to one. If more hens than one lay in the nest you wish to set one in, tack a piece of board with a leather hinge, so as to make a door large enough to exclude the intruding hens, but not the air. When you make your daily visit for eggs, be sure to let off all setters thus confined, and be sure that they find food, water, and dry wallows convenient.

All varieties of hens set 21 days. The shells should be taken from the nests as cast off by the young ones, and particular care be taken to prevent the mother from being disturbed, and the young ones from straying about the hen-house; they are not only apt to be killed, but draw from their nests all the inexperienced young setters in the room. Every hen should have her separate coop for her young, and be kept in it for a few days, until her chickens are strong and she is used to the coop herself. In these coops the broods should be all fed very early in the morning, turned out after the dew is off, and the coop left so they can house themselves at night, which they will very soon learn with care. A well bred hen will roost and lay in the place of her own choice, and use the same coop for the term of her natural life, if she is not disturbed, and it is kept invitingly for her.

Kentucky. A HOUSEKEEPER.

Sales of Stock.—In addition to the sales previously noticed we learn that Mr. Samuel Thorne has sold to H. G. White, South Framingham, Mass., the Short-Horn cow "Rowena" by Barrington, 1229, dam Double Rose by Double Duke, 1451⅓—also "Rowena 2d" by Hotspur, 4030, dam Rowena as above, and nine head of breeding swine of improved Essex blood, from stock imported from the pens of Thos. Crisp, England. Mr. White has also purchased of G. H. Brown of Duchess Co., the roan heifer "Lady Susan 2d" by Sir Guy, dam Lady Susan by Hotspur, 4030, and has sold to Mr. Sam'l Appleton (who recently purchased the farm of H. H. Peters, Southboro', Mass.) the following Short-Horns: Dora Haines by Marmion, 1843; Brighteyes 20th, by Monitor, 5019; Lizzie 2d, by Imperial Duke (18083); Bianca 4th, by Marmion, 1843, dam imported Bianca; Aurora 2d, by Matadore, 5002, dam imported Aurora. Paoli Lathrop of South Hadley Falls, Mass., has also sold to Mr. Appleton the following Short-Horn heifers: Lady Sale 9th, by Comet, 3772; Yellow Rose by Mameluke, 3114; Yellow Rose 2d, by Monita, 5019. Mr. Appleton has selected as a stock animal the three year old Duchess and Princess bull Matadore, 5002, bred by Sam'l Thorne, got by 3d Duke of Thorndale, 2789, (17749) —out of imported Minerva 4th.

What is most useful is generally least exhilarating Light has no color, water no taste, air no odor.

THE CULTIVATOR.

ALBANY, N. Y., JULY, 1865.

Ohio.—We have received from W. F. GREER, Esq., of the Ohio State Board of Agriculture, an account of the proceedings at a recent meeting of that Board to make arrangements for the coming State Fair at Columbus, Sept. 12–15th next. Mr. G. expresses much regret that the New-York State Fair is also appointed for that week, thus preventing the attendance of gentlemen desiring to be present at both. He says: "You will notice we offer on Horses two premiums of $100 each; on Cattle, for best bull $100, and a herd prize of $200 for best bull and five cows; on Sheep, for five wool ram $50, for five ewes $50, single ewe $25—for long wool ram and ewe $25 each."

The Board appointed a committee consisting of Messrs. Jones, Fullington and Greer, to carry out the suggestions of the Agricultural Convention, relative to ascertaining the amount of shrinkage upon "fine wool." They propose to offer a premium of $20 for the heaviest fleece of scoured wool from rams, and the same amount for ewe's fleece. The fleeces to be presented unwashed, with an affidavit as to the time of shearing in 1864 and '65. The scouring to be done under the supervision of the Committee, who will weigh and number each fleece and send them to factory for cleansing, without the names of the owners.

The premiums in the class of machinery are very largely increased, and a large number of new ones offered. In the matter of Sorgho machinery, all articles exhibited must be shown in operation. The premium on evaporators has been doubled. The evaporators will be required to manufacture at least half a barrel of syrup under the supervision of the committee on this class. Cane will be furnished for this purpose free of charge upon the grounds. The premiums on grain and flour were materially increased. The cheese classes were essentially modified and extended: a class of factory made cheese was added, and for the best and largest display, a silver medal will be awarded. In the Horticultural Department, vegetables, roots, &c., premiums are offered to the amount of $800.

As to the prospects of the season in Ohio, Mr. G. writes: "Grasses and grain are looking unusually well. Apples and cherries are promising a plentiful yield, also pears. It is getting quite dry; have had no rain since the 17th of May. Wool buyers talk of wool starting at 50c. It will move exceedingly slow at that rate; nothing under 75c. to 80c. will move the great bulk of Ohio wools for some time."

Death of Edmund Ruffin.—The telegraph makes the following announcement:

WASHINGTON, June 21.—EDMUND RUFFIN of Virginia, who fired the first gun on Fort Sumter, is dead. He committed suicide near Richmond on Saturday last, by blowing his head off with a gun. A memorandum was found among his papers, stating that he could not live under the Government of the United States; that he preferred death to doing so.

Mr. Ruffin, whose untimely end is thus chronicled, was formerly an extensive planter in Virginia, and by his writings and example did more probably than any other man for the improvement of the planting interest of that State. In 1833, he commenced the publication of the *Farmers' Register*—a monthly of 64 pages—at Richmond. This work he continued with great success and usefulness for ten years, when he transferred it to THOS. S. PLEASANTS, by whom it was continued for some years. After Mr. R.'s retirement from the Register, we heard little of him until the spring of 1861, when the papers stated that he hurried from Virginia to Charleston, that he might secure the *honor* of firing the first rebel gun on Fort Sumter.

Death of "Vermont Hambletonian."—This celebrated stallion died on Sunday 18th, at the farm of J. H. Chapin, Esq., near Bennington, Vt., at the age of 18 years. He was descended directly on the part of sire and dam from imported Messenger, and his colts retain much of the game and lasting qualities of the thorough-bred. He was justly regarded among judges as one of the best stock horses as a sire of trotters in this country. His loss will be seriously felt among the breeders and farmers in Vermont, as his colts readily commanded the highest prices, even from ordinary dams. Indeed, so much have they been sought after, that there is scarcely one to be found of mature age that can be had for "love or money." Efforts are now being made to replace him by a promising son of his—which went West some years ago—and it is to be hoped the effort will be successful.

Advertisements.—"Mason's Patent Fruit Jar," advertised by a company in New-York, we tested last season in the actual use of a considerable number for putting up both fruit and vegetables. It is decidedly the best thing of its kind we have seen.

Piano Fortes.—Our readers will have noticed the advertisement of these instruments by Mr. MCCAMMON of this city, which has appeared in our columns for some months. From a personal knowledge of their merits we can commend them in the highest terms. In sweetness of tone, perfection of touch, beauty of finish, price and durability, the "Boardman & Gray Piano," as made by Mr. M., challenges comparison with any instrument of American manufacture we have ever seen, and has elicited the highest praises from our most cultivated musicians.

Cleansed Weight of a Heavy Fleece.—The ram "Young Gold-Drop," bought of Edwin Hammond & Son last September, by Messrs. Isaac V. Baker, Jr., and E. W. Harrigan of Comstock's Landing, N. Y., was shorn the day his fleece was of one year's growth, and the fleece was taken to a neighboring factory and cleansed. The certificate below will give the figures. The owners are awaiting with some anxiety the report from the Canandaigua fleeces that were to be cleansed, as they are of the opinion that their ram will stand near the head if not quite there.

FORT ANN WOOLEN MILLS, May 29th, 1865.

We certify that we cleansed the fleece brought us by Messrs. Baker and Harrigan, shorn from "Young Gold-Drop," weighing in gross 23¾ pounds, which on being properly cleansed weighed seven (7) pounds.

SAMUEL LAMB & CO.

The Southern Cultivator.—The publishers of the Southern Cultivator, now issued monthly at Athens, Georgia, by D. REDMOND and WM. N. WHITE, desire us to state that they will be glad to place again upon their exchange-list the journals formerly there, and any other agricultural, horticultural or literary papers of the country that indicate a desire to exchange, by sending on copies of their publications addressed Southern Cultivator, Athens, Ga. With *Rural* journals, back numbers would be exchanged from January, 1864, to date, if desired.

REMEDY FOR THE SCOUR IN LAMBS.—Take the seed of the common dock, make a strong decoction, sweeten with loaf sugar, add half a teaspoonful cayenne pepper to the quart. Give to each lamb a wine-glassful three or four times a day until a cure is effected.

Cultivating Corn.—The old fashioned mode with industrious and thrifty farmers, was formerly to *hoe three times*,—the hoeing being regarded as the most important part of the cultivating process,—stirring with horse-cultivator being then in little repute. The relative importance of each has now become reversed. Hoeing by hand extends only a few inches from the plants, and is of small moment when compared to keeping all the intermediate space clean and mellow. Farmers who keep their land clear from the seeds of weeds, find it scarcely necessary to hand-hoe it at all; but obtain the most satisfactory results by keeping the surface stirred throughout the season by horse labor. If corn is planted in hills three feet apart, the roots need enter but a foot and a half each way to meet each other. Each square has a surface of nine superficial feet. If the hoeing loosens or cleans one square foot of soil about each hill, then it performs only *one-ninth* as much good as the horse cultivating—and only one *thirty-sixth* if the hoed portion is only six inches square.

One of the best farmers with whom we are acquainted cultivates his corn once a week, from the time it first makes its appearance till it has become too large for the horse to pass—the soil being rather strong and heavy, the crust is kept constantly broken, and the crop is usually about 70 bushels per acre. This treatment also prevents the too common evil of a profusion of weeds among the plants, towards the latter part of the season.

Hilling Potatoes.—A diversity of opinion exists on this subject, but if cultivators would look at the results, they would doubtless become satisfied as to its propriety and the best time to perform the work.

Potatoes when planted, should not be buried so deep as to prevent the young shoots from readily reaching the surface. Yet some depth is required in order that the young tubers may form in the soil, and not on or very near the surface, when they become green and bitter by exposure to light. Plant, therefore, in rather deep furrows, and cover moderately. In cultivating, the soil will work into these furrows and somewhat deepen the covering. The young tubers will form and grow without disturbance. If the earth is now hilled much, new and later tubers will form higher or above the first, producing too many, and irregular in size. The best way is to leave the soil nearly flat till the middle or latter part of summer, when the potatoes begin to assume considerable size, and to protrude towards the surface. Now is the time for hilling—which is, in effect, nothing more than *mulching* the roots to protect them from light, and to prevent them from becoming green.

We recommend cultivators to try this treatment, the present being a proper time for the first part of the process, namely, the continuance of the flat cultivation.

The Decrease of Cattle.—A correspondent from Iowa writes us: "I notice in many of the papers attempts to account for the decrease of cattle alleged to be going on through the country. There is one cause at work here which I have not seen alluded to as yet by any one. Milch cows are becoming very scarce, which is the result of a practice getting to be very common, especially among the larger cattle men, of spaying everything of the female kind in their yards, both cattle and hogs,—spayed heifers make the nicest of beef, and spayed sows the best of pork,—they will buy up large numbers of heifers, young or old, spay them, keep for a year or two, and then fatten. Heretofore the great profit of cattle feeding has been in buying stock cattle at a low price, and making by the rise per pound when fatted. It has never paid to *raise* stock. Cattle men have never paid so much, or a little more, for stock cattle in the fall as they get for fat beef in the spring, depending for profit on the manure, as they do in Europe—perhaps some day they may."

Obituary.—Wm. Buckminster, who established the Massachusetts Ploughman in 1841, and continued in charge of its editorial columns until nearly the close of the year 1862, died at his residence at Framingham on the 9th inst., in his 82d year. Mr. B. was educated at Harvard, and was a lawyer by profession. He remained in practice until a short time before the establishment of the Ploughman, when his natural taste for rural pursuits led to the purchase of the farm on which he was born, and where he has always since resided. He was cautious in forming, and firm in maintaining an opinion, but possessed in a high degree the confidence of the community, and was a highly valued and useful member of the agricultural press.

Shrinkage of Merino Fleeces.—A correspondent of the Prairie Farmer sends to that journal the following table as the result of a sheep shearing which took place in Parke Co., Ind., May 27th. Some of the sheep had been sheltered, others had not. "The several fleeces were scoured and dried at a woolen factory, in the neighborhood, and were weighed accurately before and after scouring, as I can of a truth testify, being present at both weighings. Now for the result:"

Nos.	Age of Sheep. Years.	Weight of Sheep. lbs.	oz	Gross weight of Wool. lbs.	oz.	Net Weight. lbs.	oz.
1,	2	78	—	10	6	4	2
2,	1	80	8	10	7⅛	4	3
3,	2	126	—	10	11⅛	4	6
4,	2	96	—	15	1	4	5
5,	1	74	—	8	8⅛	3	1
6,	4	107	8	9	13⅛	3	15
7,	1	67	—	8	1	2	15
8,	4	162	8	15	3⅛	4	12⅛
9,	1	70	8	14	5⅛	3	7⅛
10,	1	50	—	8	7	3	9

Taking the 10 fleeces together we find that their average weight, as shorn, was 11 lbs. 1 oz.—the average as cleansed was 3 lbs. 14 oz.—a shrinkage of a fraction over 65 per cent., or *not quite two-thirds* waste to *one-third wool*.

Fine Strawberries.—The largest and finest Strawberries we have seen this season, are sent us as we go to press, by Mr. J. Dingwall, florist, of this city. They are the "La Constante," which Mr. D. says is the most remarkable variety he has ever grown for size and productiveness. Half a dozen of the strawberries sent us, taken at random, weigh a small fraction less than four ounces, and are from one inch and a quarter to an inch and three-quarters in diameter.

Agricultural Societies.—The next show of the Ulster Co. Ag. Society, is appointed for Sept. 20–22d, at Kingston.

The Michigan State Fair for 1865, has been located at Adrian, and will take place Sept. 19th–22d.

The Hendricks (Ind.) Co. Fair, will be held at Danville, Indiana, September 26th–29th.

The Hampshire, Franklin, and Hampden, Mass., Ag. Society, have completed arrangements for their next show at Northampton, Oct. 5, 6—A. P. Peck, Secretary.

The Bucks Co., Penn., Ag. Society have appointed their next show for Sept. 26, 27—at Newtown, we presume.

An Agricultural Society has been organized at Doylestown, Bucks Co., Pa., with a proposed capital of $40,000, divided into shares of $10 each. The grounds, comprising something more than 20 acres, are to be put into the concern by the present holders at a valuation of $8,000. A good portion of the stock has already been taken, and the enterprise gives promise of success. President—Dr. Isaiah Michener.

New Books.—"Woodward's Graperies and Horticultural Buildings," is the title of a valuable Manual just issued at the Office of The Horticulturist, New-York. It will be found a most welcome addition to our horticultural literature, the authors, Messrs. GEO. E. and F. W. WOODWARD, being fully qualified by long experience as architects and horticulturists, to prepare simple and complete designs to meet the wants of builders on any desired scale. The present volume after treating of the position, forms and modes of heating, of horticultural structures, and their construction, takes them up successively, from the hot-bed and cold pit, to the propagating house, green house, grapery, orchard house, &c., including a score or more of designs, with full illustrations. [Price $1.50, by mail post free.

The Sixth, Seventh, Eighth and Ninth Reports of Dr. ASA FITCH, Entomologist of the State Agricultural Society, on the Noxious, Beneficial and other Insects of New-York, have been published in a volume of over 250 pages with many valuable illustrations and plates. We need hardly commend the labors of Dr. F. to our readers, who are already quite familiar with the carefulness, zeal and success with which these researches have been conducted under the State appropriation for the purpose, for ten years past. There will be many glad to procure copies of the present volume, the edition of which is limited. It may be had at the Agricultural Rooms in this city, or at this Office, for $1.50, or $1.75 if sent by mail post paid.

Dr. Trimble on the Insect Enemies of Fruit Trees.—This new and beautiful work should be read by every fruit-raiser. It is a neat and handsome quarto volume of 150 pages, and contains eleven colored plates, each with several figures. These figures show with great accuracy and distinctness the work of the insects on the different fruits; and the insects themselves are readily recognized by the eye, without a scientific description. It is not intended as a strictly scientific work; it is free from technical terms, and embodies in a colloquial style a vast amount of practical information, from the author's own knowledge. Dr. Trimble has not compiled this book from the writings of others, and there are very few instances where he has advanced opinions not fully sustained by facts. This is the first of an intended series, and embraces only the Curculio and Apple-worm.

The mechanical execution of this work would do honor to any establishment. It is published by William Wood & Co., of New-York.

Weeds in Gravel Walks.—We have frequent inquiries on this subject. There are different modes of preventing their growth. When thoroughly constructed by first digging a trench a foot deep and then filling it with gravel or fine broken stone, thoroughly rammed down before the fine gravel is applied to the surface, it will be a long time before weeds will have much foothold. The grass will, however, gradually work in at the edges, the fine roots passing between the stone and among the gravel. As the surface becomes worn and pulverized it assumes the character of soil, and small seeds in wet weather will take root. If the walk has been made by merely cutting a path in the soil and filling it with two or three inches of gravel, weeds and grass will more speedily infest it, and the only way to get rid of them is by the use of a sharp hoe, garden rake and heavy roller.

Very durable walks, which will neither wash nor allow the growth of weeds, are made by mixing coarse gravel or sand with gas tar. The latter being waterproof, such walks are never broken by frost. But there is one serious inconvenience—in hot weather the odor of the tar is decidedly offensive, and this result continues even for years after they are constructed. A covering with an inch or two of fine gravel lessens or nearly destroys this bad effect, and the tar below prevents weeds from finding their way upwards. Where broken stone is used the weeds may be prevented from growing by applying water-lime cement. If the sharpest and cleanest sand is used with the best water-lime, it will become so hard and perfect as not to be affected by frost; but if the cement is poor, or of a medium character, freezing and thawing will gradually reduce it to powder.

Washington County Wool-Growers' Association.—We have already referred to the success of the exhibition and public shearing of this Society, which took place at North Granville, May 4th and 5th, when the following prizes were awarded, as just published in neat pamphlet form, with the constitution and regulations under which the Show was held:

First Division—As regards Quality of Wool.

Ram Lambs—1. R. S. Holley, Adamsville,	$2
Rams one year and over—1. B. M. Wing, Granville,	2
3 Ewe Lambs—1. H. W. Beckwith, W. Granville Corners,	2
3 Yearling Ewes—1. Bryan J. Lawrence, West Granville,	2
3 Breeding Ewes, two years and over—1. Baker & Harrigan, Comstock's Landing,	2

Second Division—As regards Quantity of Wool.

Ram Lambs—1. H. W. Beckwith,	$2
3 Ewe Lambs—1. do. do.	2
3 yearling Ewes—1. Geo. H. Buell, Whitehall,	2

Third Division—As regards Symmetry of Carcass..

Ram Lambs—1. H. W. Beckwith,	$2
3 Ewe Lambs—1. do. do.	2
3 Yearling Ewes—1. Bryan J. Lawrence,	2

Fourth and highest Division—As regards the above Qualities combined.

Ram Lambs—1. T. S. Steele, Shushan,	$4
2. Bryan J. Lawrence,	2
Rams one year and over—1. W. H. Wright, Whitehall,	4
2. Baker & Harrigan,	2
3 Ewe Lambs—1. Hotchkiss & Stoddard, Hampton,	4
2. Deliverance Rogers, Granville,	2
3 Yearling Ewes—1. Hannibal Spring, Whitehall,	4
2. Geo. Kingsley, Whitehall,	2
3 Breeding Ewes—1. Bloomfield Russell, Hartford,	4
2. Hiram Brayton, Hartford,	2

The Judges on Ram Lambs also commend those shown by Thos. Cree, North Granville, and Hiram Hotchkiss, Hampton, as worthy of especial mention. The Judges on Breeding Ewes note a pen of five shown in this class by E. R. Cross, Shaftsbury, Vt., as only not entitled to a premium owing to the non-residence of the exhibitor. The total entries were as follows:

1st class—Ram Lambs,		16	entries,	16	sheep.
2d do.	Rams one year and over,	30	do.	30	do.
3d do.	3 Ewe Lambs,	12	do.	38	do.
4th do.	3 Yearling Ewes,	6	do.	20	do.
5th do.	3 Breeding Ewes,	6	do.	20	do.

There were also many sheep shown not for competition.

On the sheep shorn in competition, the 1st prize for ram lambs was awarded out of a class of five, to Hiram Sheels, Whitehall—weight of sheep 92 lbs.—of fleece, 15½ lbs. On rams one year old and over, in a class of seven, to Viele & Marshall, Saratoga county—weight of sheep 94 lbs.—of fleece, 24 lbs. On ewe lambs to D. Rogers, Granville, and on breeding ewes to E. B. Cross, Shaftsbury, Vt. The average weight of the twelve rams and ram lambs shorn, was 101 lbs.—average weight of their fleeces, 18 lbs. 7 oz.

The Report of the Exhibition as published is highly creditable to the officers of the Association, and shows that its management has been entered upon in a spirit affording good promise of future usefulness.

Merino Ram for Iowa.—J. S. Mardis, Esq., of Lowden, Cedar Co., Iowa, has purchased a four year old ram of Isaac V. Baker, Jr., Comstock's Landing, N. Y. The ram was purchased to improve Mr. Mardis' large flock of grade ewes. He is said to be an extra good stock ram.

Inquiries and Answers.

Fermentation of Manure.—In the first volume of the CULTIVATOR, at page 7, in an address delivered before the State Ag. Society, under the head of manures, the speaker says, "that barn-yard dung loses a large portion of its fertilizing properties, in the gases which escape where fermentation is suffered to exhaust its powers upon it in a mass." Now, Messrs. Editors, the query with me is this, does manure lose anything by fermentation and the escape of the gases; or in other words, are these gases food for plants? I think this volatile odor that escapes from decomposing animal or vegetable substances must first arise, and therein the great atmospheric laboratory be prepared for the food of plants, and then fall in the form of dews and rain. These queries have never been satisfactorily answered in the minds of the "*plebeian farmers.*" Will the Editors give us more light on this most important branch of practical farming—should manure be used green, or suffered to get ripe before it is used? LOUIS P. LEGG. *Tioga Co., N. Y.* [The valuable parts of manure consist of its volatile as well as its soluble and not volatile materials. If there is nothing to retain the volatile parts during fermentation, such as straw, loam, peat, &c., a considerable portion will obviously be lost. The most perfect manure is that which is fermented with enough absorbing materials to retain all that is valuable. Ordinarily with common yard manure, there is enough of coarse material mixed with it to absorb most of the gases before their escape. Hence there is usually less loss in this way than many suppose. Where, however, it is allowed to escape largely, the farmer will not be likely to receive much back again, as it will probably rise high in the air, and be carried hundreds of leagues by winds over mountains and forests, and perhaps be absorbed by the ocean.]

Refuse Coal, &c., as Manure.—Would fine charcoal, the refuse of coal pits, be of much benefit if applied to young apple trees? I have an orchard of 500 trees set out four years since, and this charcoal was burnt—and has been exposed to the weather ever since—last season, and is one mile from my place. Would it pay to draw and apply a bushel to each tree? J. D. K. *Putnam Co., N. Y.* [Charcoal, after being long exposed to the air, loses its absorbing power, and becomes less valuable. The various refuse matters from old charcoal pits, contain a considerable quantity of fertilizing matter, as is shown by the strong growth sustained on such spots for years afterwards; but if spread broadcast over the roots of trees, or worked in, it will produce less sensible results than manure or compost, or the mellow cultivation of the surface.]

Wagon Wheels.—Why are the hind wheels of a wagon made larger than the forward wheels? L. P. L. [To facilitate turning, by allowing more room for the forward machinery.]

Churning.—Will you please give your opinion which process makes the better butter, to churn the milk and cream together, or to churn the cream alone. This is a mooted question among the dairymen in this locality, which would be a nice thing to finally settle, if it could be effectually done. L. P. L. *Tioga County.* [An article will be found on page 335 of this paper of May 25th, taking very strong ground in favor of churning the milk and cream together. But we do not refer to it as decisively settling the question by any means, although our own opinion has been this: That while somewhat *more* butter may be obtained by churning milk and cream together, arising from the greater certainty of securing all there is in them,—on the other hand, except by the most careful management, the *quality* of the butter is *likely* to be superior when made from the cream alone. We have seen dairies of very superior character, however, where it was customary to churn both, and yet the majority of the best and largest butter makers, so far as our experience goes, lean perhaps to the other side.]

Grass Seed.—Having heard that the Orchard grass is a hardy plant, I propose sowing sixteen acres with it, now in wheat and oats. My plan is to plow in September, harrow thoroughly, and sow Orchard grass and Timothy. How many bushels must I sow of each kind? Would Kentucky Blue grass be a good addition to the above for cattle or sheep pasture? If so, in what proportion to the other seed? Where can Orchard and Blue Grass be obtained? F. H. A. *Penn Yan, N. Y.* [Orchard grass being very light and chaffy, a bushel or two is usually required for an acre when sowed alone—about eight quarts of Timothy seed, and six quarts of Kentucky Blue grass. If sown together the quantity of seed of each would be correspondingly less. As Orchard grass is a strong grower, and forms a stiff, rough turf, it is doubtful whether the two other sorts would generally mix well with it as a crop. Orchard and Blue grass seed can probably be obtained only of the large city agricultural seed stores, for instance of J. M. Thorburn & Co., New-York.]

Muck.—Would not muck make a fertilizer equal to yard manure, by spreading it over the yards to the depth of a foot, before shutting up the stock, by absorbing the liquid manure drenched down by the rain. W. [Wet muck, as it usually occurs, is nearly nine-tenths water. If made perfectly dry it will consequently absorb nearly nine times its weight of water or liquid manure. If therefore it be placed on a sheltered barn-yard, or under a shed, it is capable of absorbing a great deal of concentrated liquid manure, and of then becoming a powerful fertilizer. If free from straw or other fibrous matter, it will spread easily, and may be thoroughly intermixed with the soil. If the amount of rain which falls is only sufficient to wash down the liquid manure into the muck without overcharging it with water, the result will still be quite successful; but if the muck is placed quite wet upon the yard, or if there is an abundance of water overflowing, it will be of comparatively little use.]

Bee-Books.—I would like to know where I could obtain the best work on the general management of bees, and who is the author. G. H. *Frederick, Md.* [Langstroth's and Quinby's are the two best works on bees—the price of the former $2—the latter $1.50. We can send them.]

Churns.—My father has lately purchased a small place in the country, and intends keeping a cow for the purpose of supplying the family with milk and butter. Will you please inform me through your paper, which you consider the best churn to use where only one cow is kept? By doing so you will much oblige S. E. H. *Newark, N. J.* [Kendall's cylinder crank churn, No. 2, is probably the best for your purpose. It can be procured at the agricultural or wooden warehouses for about $3.]

Eccaleobion.—Will you please inform me where I can obtain an American egg-hatching machine, or any information regarding it? ELISHA HUBBARD. *Middletown, Conn.* [Contrivances for this purpose have been put in operation, by which chickens have been produced, but we have never seen or heard of one which could be rendered practically useful.]

Poultry.—I wish to know the best method of keeping hens, and what is the best feed, and how many can be kept in a building, 50 by 60 feet, containing 3,000 sq. ft., and do well; and out of, say 4,000, what portion of them would lay every day, and in the laying season what portion of the year might reasonably be figured upon for them to lay; and also give statistics as near as possible, what has been the average price of eggs for the last six years, and price of chickens per pound for the same time, and about what amount of corn, wheat or buckwheat it would take to keep one hundred per day? A SUBSCRIBER. *Alburgh, Vt.* [If our correspondent will read over the poultry articles which have appeared in this paper during the past year, he will find all the information we can give in answer to his questions. If, however, any of our readers can enlighten him, we shall be glad to hear from them.]

Stump-Puller.—Can you inform me where Willis' Stump Machine is made, whether it is still a patent, also the price? It is the same as is described in the ANNUAL REGISTER for 1855. H. H. K. [The patent on this machine is still in force we presume, but are not aware that it is now manufactured—the inventor if we are not mistaken having met with pecuniary difficulties some years ago.]

Hay Sweep.—It would gratify and advantage your readers if you would publish, in a very early number of your paper, the description and accompanying cut of the "hay-drag," which you published about this time last year. SAML. CLAY. *Woodford Co., Ky.* [As we are unable to comply with this request, owing to the disappearance of the engravings, we refer all interested in the matter to our ANNUAL REGISTER for 1862, p. 180, where the engravings and a full description will be found.]

Wild Onions.—In your number for May 25th there is an inquiry for the best mode for destroying wild onions. I have found that buckwheat sown in May or June on well pul-

verised land will kill all the weeds and leave the ground in first-rate order, and clean. My practice has been to sow the buckwheat about June 1st, let it get about one foot high, or let it stand until the 1st August, then plow it under and sow winter grain, say Sept. 1st, and seed with the different grasses wanted. B. *New-York.*

Transplanting Currant Bushes.—If currant bushes are to be transplanted, is it not the best time to perform this work as soon as the fruit is ripe and the bushes done growing? A friend tells me that if currant cuttings are planted the last of August, roots will start before cold weather sets in, and a greater growth may be obtained the following season than if not planted till spring. Is it so? JERSEY LAKE. [Currant bushes can be transplanted any time when not in a growing condition. If done when the leaves are green, they should be stripped off, unless the roots are lifted out entire. Cuttings are better if made in autumn before the leaves fall than if taken off the following spring. They will form a callous and frequently some roots before winter.]

Deep Plowing.—I have been watching some time for an essay on deep plowing. Will you, Messrs. Editors, please enlighten me? Is deep plowing recommended in all cases? If not, under what circumstances should it be avoided? If there is any recognized philosophy on the subject, I would like to understand it. A. D. C. *Lynchburg, Ohio.* [Deep plowing must be controlled very much by circumstances. A deep soil is always better than a shallow one, other things being equal, because the roots of plants have a better chance to extend themselves, derive a larger amount of nourishment, and such soils are less affected by wet seasons or severe drouth. If the top soil is rich and the subsoil is sterile, the latter should be stirred only by subsoiling, and not brought to the surface, unless in small successive quantities, until by repeated manuring, its fertility is gradually deepened. If the subsoil is rich, it may be brought up by trench plowing, with or without previous subsoiling, and mixed advantageously with the surface.]

Buckwheat for Feeding Stock.—I notice in Co. GENT. for May 18, a piece relative to feeding buckwheat. All the grain I fed last winter to 30 head of cattle, 100 sheep, and my horses, swine and fowls, consisted of one-third buckwheat, the balance being of corn and oats, equal quantities. I saw no effect of the kind mentioned from its use. My stock did remarkably well, and although I had been warned against feeding it to sheep, lest it started the wool. I found them less ragged than other flocks where none had been used. Some years since, having a quantity of buckwheat straw, I bedded my hogs upon it; they soon began to break out, mostly upon the bellies, and some of them very badly. Upon removing it and substituting wheat straw, it disappeared in a few days. Does not Mr. JOHN JOHNSTON feed buckwheat to his sheep in winter? If so, his opinion would be valuable to us. H. G. W. *South Framingham, Mass.*

Cheese Factories.—Correspondents wishing to erect a factory in Canada East, inquire where to go for the sake of visiting one in operation with latest improvements. In the vicinity of Utica and Rome, in this State, they would be likely to secure all desired information. The Railroad Freight Agent at the latter point could probably direct them to the nearest factories in that neighborhood, and at Utica they can inquire of W. H. Comstock, Secretary Cheese Manufacturers' Association.

Why Don't the Butter Gather?—Having had some experience with different cows and butter-making, we are ready to acknowledge that we do not know much about the business, because we have a cow giving about 10 or 11 quarts of milk at a milking, with a good cellar to keep the milk in, and yet in warm weather we are not able to get the butter to gather, but it remains in the butter-milk, looking much like coarse meal. E. S. FOWLER. *Bartlett, O., 5th mo.* 26.

Trouble with a Horse's Head.—A mare that I have recently purchased from the government is affected in the following manner: The trouble appears to be in his ear or head, I cannot ascertain which, as there is no sore or anything visible to cause the difficulty. In buckling the bridle or halter she will move her head as far as possible from the hand, and on several occasions, while at work, she has stopped and throwing her head to one side, backed for a considerable time, as though in pain and trying to escape it, and while standing will constantly toss her head. If any of your readers can inform me of the cause, and if possible a remedy, they will greatly oblige A SUBSCRIBER. *New-Jersey.*

Dewberry or Running Blackberry.—I wish to know the best way to train the above vines. C. H.

Foreign Notices.

An Important "Event."—We have barely room to announce this week the result of a sale of Short-Horned "Grand Duchesses" and "Grand Dukes" composing the herd of the late Mr. Jos. HEGAN of Dawpool near Birkenhead, England, which took place at London, June 7th. Mr. STRAFFORD, the auctioneer, kindly sends us the London Times, which devotes one of its longest and most learned leaders to the text afforded by the occasion, and the Agricultural Gazette, with its fuller and more practical exposition of the affair. With the exception of "Imperial Oxford," which was one of the bulls sent to England two or three years ago by Mr. THORNE, the entire herd of Mr. Hegan was descended from the celebrated cow Duchess 51st, bred by Mr. Bates, at Kirklevington, who purchased Duchess 1st, at Mr. Charles Collings' sale in 1810, the family having originally been obtained from the ancestors of the Duke of Northumberland. In 1862, 13 descendants of Duchess 51st then belonging to Mr. S. E. Bolden, were purchased in one lot by Mr. Hegan for £5,000. Twelve cows were now sold, in lots of three each—the first lot (5, 7, and 8,) sold for 1,900 guineas; the second lot (9, 13, and 18,) for 1,300 guineas; the third lot (10, 15, and 17,) for 1,800 guineas; and the fourth lot (11, 12, and 14,) for 1,200 guineas. The 12 cows thus fetched 6,510*l.*; the average price being 542*l.* 10s. They were all bought by Mr. E. L. Betts of Preston-hall, Kent. The bulls were sold separately. Imperial Oxford was sold for 450 guineas, also to Mr. Betts; Grand Duke 6th was sold for 130 guineas to Mr. Bland of Coldby-hall, Lincoln; Grand Duke 9th, for 310 guineas, to Mr. T. Walker of Birswell-hall, Coventry; Grand Duke 10th, for 600 guineas, to the Duke of Devonshire; and Grand Duke 13th, for 100 guineas, to Captain Gunter of Wetherby-grange. The five bulls thus brought 1,669*l.* 10s., their average price being 333*l.* 18s. The total price of the 17 head of cattle was 8,179*l.* 10s.

The Architect of the First Crystal Palace.—The Gardener's Chronicle of June 10th says:

"It is with deep sorrow, which will be shared with us by every gardener of high or low degree, that we announce the death of Sir JOSEPH PAXTON, which took place at Sydenham, on the morning of the 8th inst. No word of ours will be needed to increase the regret which will be felt at this sad event by those who had the privilege to know our dear lost friend, of whom it may be truly said, that those who knew him best, will the most deeply mourn his loss."

A New Move.—Various Agricultural Societies in Great Britain have lately shown a disposition to move in the cause of Agricultural Education. The Kingscote Association, for instance, has just made arrangements for a course of lectures on chemistry. Mr. A. B. Church, M. A., Professor of Chemistry in the Royal Agricultural College, Cirencester, has consented to be the instructor of the class, and has already delivered two lectures. Fourteen members have joined. And at the close of each lecture the members receive a paper of questions, to be answered in writing; and are recommended to perform at home certain experiments in illustration of the subject last treated of, as the course proceeds. These experiments will be made to have as direct a reference to agriculture as possible, and will embrace the testing of manures and soils, and the examination of feeding materials and water.

Fowls Changing Color.—The London Field quotes from the COUNTRY GENTLEMAN the instances recently described in our columns by Mr. Bement, in which colored fowls changed to white, and adds:

"Some few years since we saw in London a Spanish hen that had been originally perfectly black, but that subsequently moulted white. With so many examples,

the fact that colored fowls of different varieties may become purely white, may be considered as perfectly authenticated. It would be very interesting to obtain a pair of such fowls and match them together, to observe the color of the progeny. Our own opinion is, that they would not be white, but would throw back to their more remote ancestry."

How to keep Cattle on Thirty Acres of Land.—One of the most interesting papers in the Journal of the Royal Agricultural Society of England is that in which the Rev. J. L. Brereton relates his experience in the use of bought food upon about thirty acres of grass land, the extent of his glebe. On this small plot about £1,500 worth of stock has been kept by a purchase of food and manure to the amount of nearly £500, that the result is a profit of about £100, besides manure, "worth about £200." The following are Mr. Brereton's conclusions on the question of feeding cattle on bought food:—1. That it is quite possible to feed animals on purchased food alone. 2. That a mixture of the common grains and pulse, *e. g.*, linseed, peas, beans, wheat, &c., may be made for £10 per ton, which will fatten any animal. 3. That the addition of seasoning (aniseed and fenugreek are those that I have used for five years,) at an additional cost of £1 per ton, appears to pay well in the added relish and the improved condition of the animals. 4. That doubling the quantity of linseed, though raising the price, probably gives quite a proportionate increase to the value of the mixture. 5. That by the use of this meal the farmer may fearlessly increase his stock without adding to his acres; and yet, by that increase of stock, greatly increase the productiveness of his farm. This consideration both suggested and replied to the following exclamation of a neighboring farmer:—"Mr. Brereton, if you're doing all this on thirty acres, I'm thinking what's to become of the landlords." 6. That the use of sea-sand as bedding will enable the farmer either to dispense with straw, or to use it more profitably as food; and that besides possessing, according to its quality, manurial properties, the sand acts as a purifier of the land, and seems to allow of a closer herding of stock than might be otherwise safe. 7. That sheep may be folded on grass with great advantage, if some shelter and dry treading are provided in adjacent yards during excessively wet weather; but the bullocks and horses do best in yards and sheds, the grass grown after the fold being cut by the scythe and carried to them.

Importation.—We learn from a Boston paper that the Italian barque Sophia, from Constantinople, Oct. 26th, arrived in Boston on the 27th ult., having on board 30 Angora goats, for W. W. Chenery, Esq., of Belmont. Of 30 shipped, only one died on a voyage of 7 months, the original number having been kept good by a kid dropped on the passage.

Canadian Combing Wool.—At a recent Agricultural Meeting at Hamilton, C. W., the price at which the Leicestershire or combing wool mostly produced in Canada West, should be held the present year, being under discussion,—a series of resolutions was adopted, in which the positions were taken, 1. That the supply of this description of wool in Canada does not equal the American demand; 2. That as England is the only source of foreign supply, the price here should be governed by that in Great Britain; 3. That as the cost of duties, transportation, &c., on English wool is equal to 25 cts. per lb., the price of Canadian wool may be set at 10 cts. a lb. above the English price, and still leave a margin of 15c. per lb. as an inducement to purchasers, and, lastly, "that the present price in England being 50 cts., the price in Canada ought therefore to be 60 cts. per lb."

With a view of establishing a regular market day for wool, it was also—

Resolved, That in the opinion of this meeting, it would prove a very great advantage to wool-growers if they would fix upon one day in each week, say Saturday, to bring in their wool for the purpose of inducing wool-growers from a distance to enter into competition with the Hamilton wool-buyers in the purchase of that article.

Illustrated Rebus—No. 19.

Illustrated Rebus—No. 20.

Illustrated Rebus—No. 21.

Illustrated Rebus—No. 22.

ANSWERS TO ILLUSTRATED REBUSES.—No. 15. Be-nought-dis-heart-in-d by in-die-gent-s—Success-ful men of-ten beg-in with a very small-capital. "Be not disheartened by indigence. Successful men often begin with a very small capital." No. 16. A knife for an eye, a tooth four a twoth and a life for al eye f, "An eye for an eye, a tooth for a tooth, and a life for a life." No. 17. He w-hoe love-s m-on-eye more th-an-h-on-r will rat-eye-t above honesty. "He who loves money more than honor will rate it above honesty." No. 17. Two-under-stand ewer stud-e-s well, do knot-under-take two-men-e. "To understand your studies well, do not undertake too many."

A Word for the Chester Co. White Hogs.

In the fall of 1863 we procured a pair of Chester Co. pigs. They grew very well through the winter, and in the spring the farmers brought ten sows at $1 each, to our Chester boar, and they were so pleased with their pigs, that last fall there was 54 sows brought to the boar at $2 each, and those pigs are now selling for from $1 to $2 each more than pigs that have no Chester blood in them; and those that patronized the boar last spring and fall have brought their sows again, and are very willing to pay $2 for the service of the boar. We think this speaks well for the Chester breed, for we had all kinds in this section, and they have brought sows to the Chester boar, Suffolk, Maccay, Yorkshire, Berkshire, Essex, Portuguese, and mixtures of those different breeds.

Elgin Spring House, Vt., S. & W. S. ALLEN.

The product of three crops from 33 grains of oats received in a letter by a farmer in Illinois, measured 370 bushels.

Perfecting the Flavor of our Cheese.

In Mr. WILLARD's annual address before the State Cheese Manufacturers' Association at Utica last winter, just published, with other proceedings, in pamphlet form, the above subject is referred to at some length, and the necessity for still greater care enforced, both as regards factories and private dairies—as well in the treatment of the cows and management of the milk, as in the actual making and curing of the cheese itself. Mr. W. says:

The old factories need remodeling. The new factories should be constructed with particular reference to cleanliness, the avoidance of all taints about the buildings likely to be absorbed by the milk or cheese; and finally, an arrangement of the dry-house, so that some uniformity of temperature be preserved while the cheese is undergoing the process of curing. There are a large number of factories where no attention is paid to these conditions. Whatever wonderful skill is exercised in the management of the milk and in its manufacture into cheese, how is it possible to obtain sweet, clean, and high flavor from milk reeking in emanations from the pig-sty, the stench of putrid whey, or the odors arising from decomposing slops? How is it possible to obtain high flavored cheese in dry-houses so arranged that no uniformity of temperature is preserved from day to day, in a climate like ours, where the thermometer frequently varies from 20 to 30 degrees in twenty-four hours.

My friends, I belong to your class, and am interested in the success of American Cheese Dairying, and I say to you, earnestly and in good faith, that you are asking too much from the manufacturer, to require him to furnish high priced cheese from imperfect milk—milk that is feverish or diseased, or mingled with filth before it leaves the stables. Cleanliness is one of the virtues, and it is imperatively demanded in the production of nice flavored cheese; to say nothing of the vice of forcing on consumers unclean food arising from careless or inattention on your part.

Dogs are a curse among the herds, not only lessening the quantity, but injuring the quality of milk. It is well known that milk, heated and feverish from over-driving cows in hot weather, is not a healthy article of food. Cows that are kicked and abused will not secrete good milk, and I have yet to learn that there has been any process of cheese manufacture invented that can convert diseased milk into a healthy diet. Matters of this character should be attended to in every association. Each member should be required to furnish good, clean, healthy milk, with as much watchfulness and care as water dilutions are guarded against.

These are some of the causes that influence flavor. There are others, such as food, water, neglect of salting, &c., &c., which need not be considered in this place. I may remark, however, that Mr. Farrington, for many years a cheese dealer in Herkimer county, and a noted expert in the cheese trade, has affirmed that he could detect the daisy taint in cheese, and was able to tell (with the "tryer" at the store house) when the cheese had been produced on farms overrun with this weed. Leeks, cabbages and turnips give a taint to milk and butter, and it must be evident that this influence of food extends also to cheese.

But a radical change should be introduced in the dry-house. Its location in a pure atmosphere, with thorough ventilation to carry off noxious emanations that are arising from the cheese during its process of curing, are not the only improvements demanded. Temperature should be under control so that fermentation may be carried on with uniformity. It has been claimed that the superiority of English cheese is due in a great measure to the even temperature of the climate, and yet with all this advantage of climate, the Cheddar dairymen pay more attention to the ripening process of their cheese than is done at the American factories. The use of the thermometer is as necessary in the dry-house, as in the milk-room. Large quantities of well-made cheese are badly spoiled in curing. When the weather is just right, the curing process goes on without much trouble, but when it is variable, with extremes of heat and cold, damp and dry weather following in rapid succession, the cheese is more or less out of flavor, and no after treatment will be able to correct the difficulty. The dry-house should not only be arranged with ventilators at the ceiling and wickets at the floors, giving free communication with the air outside, but it should be so constructed, that a low, even temperature be preserved in hot as well as cold weather. The temperature best adapted to curing cheese in order to secure the fine flavor, is from 65 to 70 degrees.

Proper Time to Cut Grass for Hay.

MESSRS. EDITORS—There is a question as to what age, in respect to growth, grass or clover should be when cut, and how it should be dried, in order to make the *best hay for cattle.* Any one who has had the care of cattle, and been a little observing, may have noticed that when cattle are fed with hay that causes their droppings to be hard and dry, they will not thrive in growth or take on flesh; also that cows so fed, will not give much milk, and their milk will not produce much butter. They may have noticed that this was particularly the case when the cattle were fed with hay, the grass or clover of which had stood in the field until it had died with old age, or been injured by rotting in the making.

I think the proper time to cut grass or clover, is when it has just attained its growth, (clover just coming into blossom,) and while it is yet palatable for feeding—as in soiling when freshly cut and laid before the stock, they will eat it entire, "butts and all," and *fill themselves well.* Grass that becomes unpalatable for feeding, from whatever cause, will not when dried be palatable hay; and hay should be not merely nutritious but palatable, so as to induce cattle to convert as much as possible into bone, flesh and milk.

I think the grass or clover should be dried by air and sun, and not bleached in the least by dew or rain, or allowed to heat in the cock or mow. Either of these rotting processes causes the hay to be less palatable and less nutritious, and harder to digest, and may be likened for feeding cattle, to the use of dozy wood for feeding fires. AMOS FISH.

Bethlehem, N. Y., May, 1865.

My Remedy for Cucumber Bugs.

I sow cucumbers in rows the same as peas, and using about as many seeds. Plant as soon as the frost is well out of the ground, and when up use the hoe two or three times a day, till the plants get out of the way of the bugs. I have not missed having plants for family, and early, for 25 years.

Dover, Del., June 5, 1865. SHEPPARD SHELL.

Teaching Hogs to Destroy Thistles.—We copy the following from an Irish journal:—"Tramp on the buds of a goodly number of the largest plants in the spring, and place on the buds a teaspoonful of salt; then turn your hogs on them. They will eat the roots of the salted plants first, and will thus acquire a fondness for them, and will continue to eat them daily as long as they can be found. If but one hog be educated in this way, he will teach the whole herd to eat them, and they will exterminate all on the farm."

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